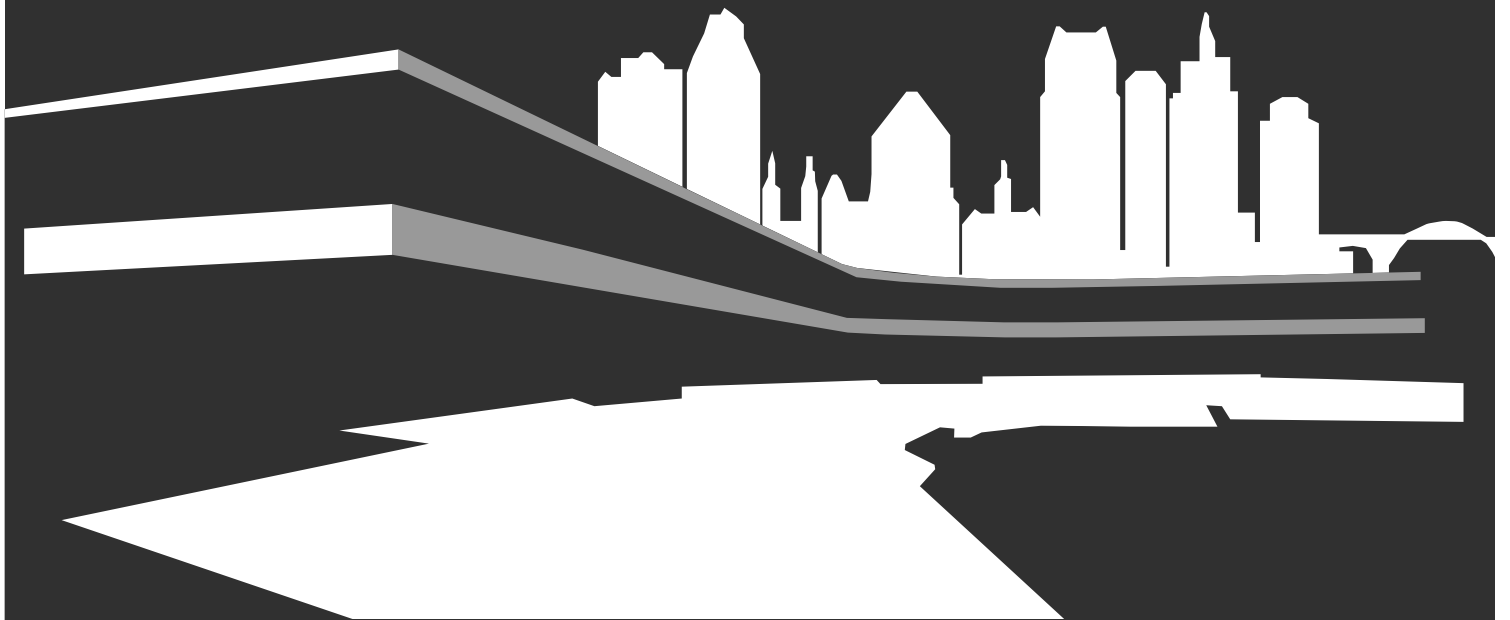


OVER THE FENCE

Creating a Symbiotic Relationship Between Sports
and Community



Matt Kohl

OVER THE FENCE

Creating a Symbiotic Relationship Between Sports and Community

A Design Thesis Submitted to the Department of Architecture and Landscape
Architecture of North Dakota State University

By
Matthew Kohl

In Partial Fulfillment of the Requirements for the Degree of Masters of
Architecture

North Dakota State University Libraries Addendum

To protect the privacy of individuals associated with the document, signatures have been removed from the digital version of this document.

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Abstract

Baseball is America's pastime, every game thousands flock to ballparks to catch a glimpse and experience the game at the ballpark, but what makes that ballpark experience? It is more than the game itself, it should be a place that embodies and builds a sense of community. A place with something for every fan. And a place that provides long-term attendance and sustainable revenue.

The development of the surrounding buildings of a stadium, which creates that close relationship, can create a unique environment and identity for the site. My project will focus on that surrounding context to extend the ballpark experience beyond the stadium.

Title: Urban Development of a Ballpark

Typology: Urban environment around a ballpark

Site: St. Paul, Minnesota

Context:

Sports are a big part of the lives of many Americans, they provides entertainment for many and can bring people together. Saint Paul is home to the Saints, who recently became a member of the MLB's Triple-A league. They are the only professional team in the city, with the other major professional team, the Twins (MLB), in Minneapolis it provides an opportunity to expand the Saints' identity in the city St. Paul.

Premise of investigation:

At first sport venues such as ballparks were built in urban areas, making them unique to their locations and became an integral part of their communities. No two stadiums were the same, with each having their own special features and quirks unique to that location, drawing in large crowds every game.

But soon these urban ballparks were replaced by much larger copy-and-paste multi-use complex stadiums to max seating capacity and surrounded by parking lots to accommodate the projected large crowds. With no urban context around the stadiums or identity many of these complexes were vacant for most of the year. Overtime as less and less visitors came, they quickly became neglected and fell into disrepair. Recently there has been a renewed interest in the older urban venues, with a more experimental approach.

These new ballparks were known as retro-ballparks, as their aesthetics were inspired by those older ballparks. They were built into more urban environments, with many using the city's skyline as part of their design. With a more experimental approach they added those unique features that made each ballpark different.

Since the renewal of retro-classic ballparks, the experience of the fan has become more important than the number of seats that can fit in the stadium. It allows for diversity and the opportunity to choose your own adventure, when designing for sports it is important to map the journey of the fans (Santee, 2020). From how they get to the stadium from their home, is there parking or public transit? Where can I buy merchandise? Are there places to get a bite before the game? and what to do after the game? Or if I don't have a ticket, where can I go to watch the game? Stadiums want to bring people together to make the experience better than watching at home to increase their revenue.

The final design will be a place that answers many of these questions. It will be a mixed-use entertainment project that offering commercial and retail that provides an extension to the ballpark experience, offering year-long attendance and sustainable revenue.

Project Typology

The typology is the urban area around the ballpark, an entertainment district with a mix of commercial and residential. I believe this environment outside the ballpark enhances the overall experience, so it would need to sustain the community for the team, who will build upon the team's identity.

Typological precedents research

When selecting the primary projects for typological research, the major factors taken into consideration were the following:

1. Typology: Ballpark, mixed-use and entertainment
2. Context: Urban downtown setting adjacent to a ballpark.
3. Impact: Project offers new sources of entertainment, while enhancing the ballpark
4. Ideas: Project explored different ideas of form and function to complete enhancements.

The following project were given special consideration for typological research:

- 1) Fenway Theater, Boston, Massachusetts
- 2) Camden Yards, Baltimore, Maryland
- 3) Ballpark Village, St Louis, Missouri
- 4) The Battery, Atlanta, Georgia



Fenway Theater

Location: Fenway – Kenmore, Boston, Massachusetts
Architect: DAIQ Architects
Approved: 2019
Typology: Performing Arts Center
Size: 67,400 sf



Figures 1-4

Fenway Park:

Fenway Park was completed in 1912 in Boston. It is the oldest active ballpark in the MLB, it was rebuilt in 1934 and has had several renovations throughout its history resulting in many quirky features. It is one of the last remaining urban ballparks from the early 20th century to survive. It is the 5th smallest stadium in seating capacity and the 2nd smallest in total capacity (37,000). Yet it is one of the most well-known sporting venues in America and one of the most profitable.



Figures 5-6

Project Description:

Fenway Theater project is a performing arts center currently in development at 12-28 Lansdowne Street, adjacent to Fenway Park. It also consists of improvements to Fenway Park, including a new bleacher overlook addition to the ballpark with concession stands, and restrooms, as well as renovations to Fenway's existing garage connecting the new venue to the ballpark.

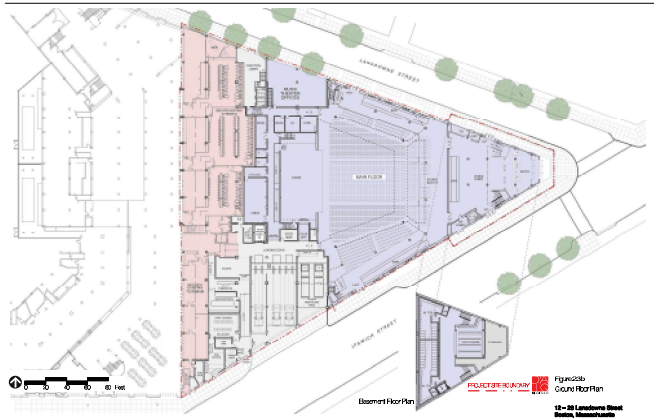


Lansdowne Street Elevations

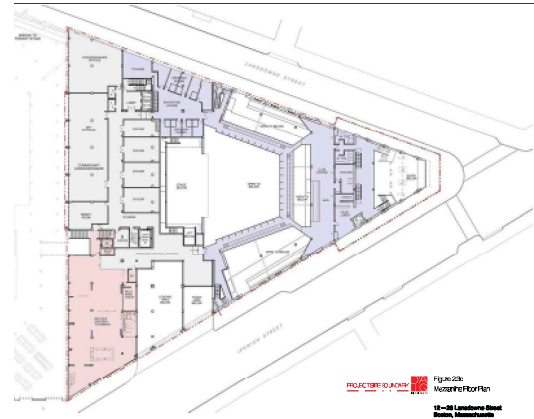


Ipswich Street Elevations

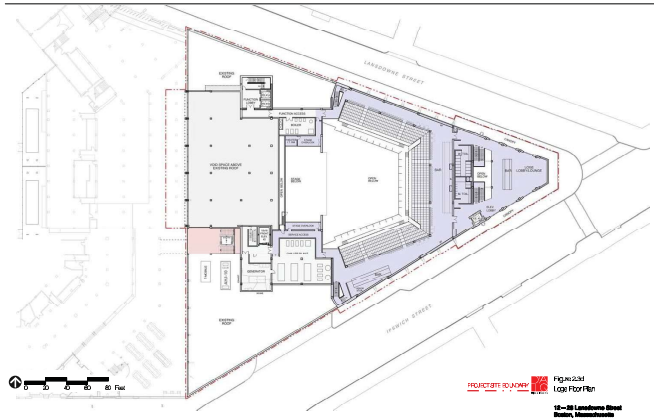
Figures 7-8



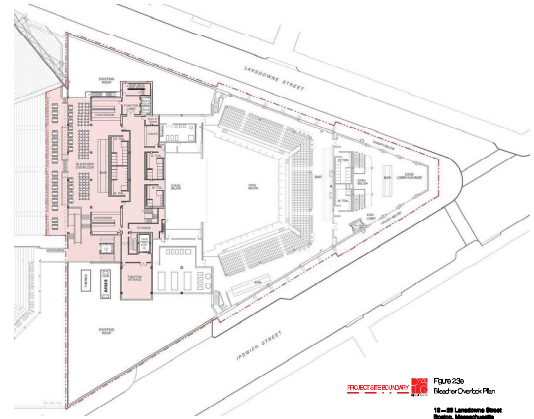
Ground Floor



2nd Floor (Mezzanine)



3rd Floor (Loge)



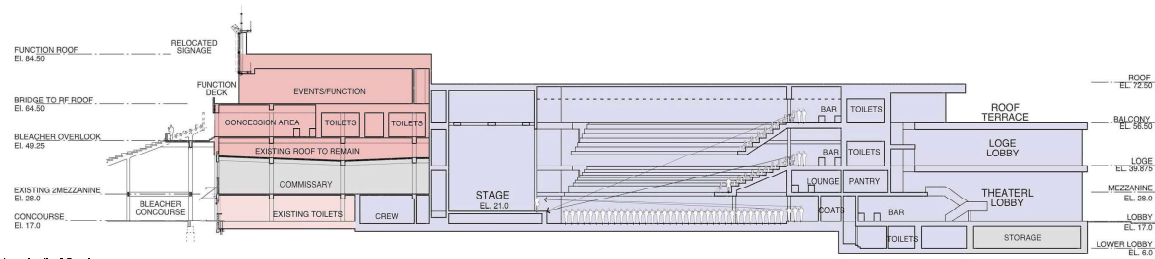
Bleacher Overlook

Figures 9-12

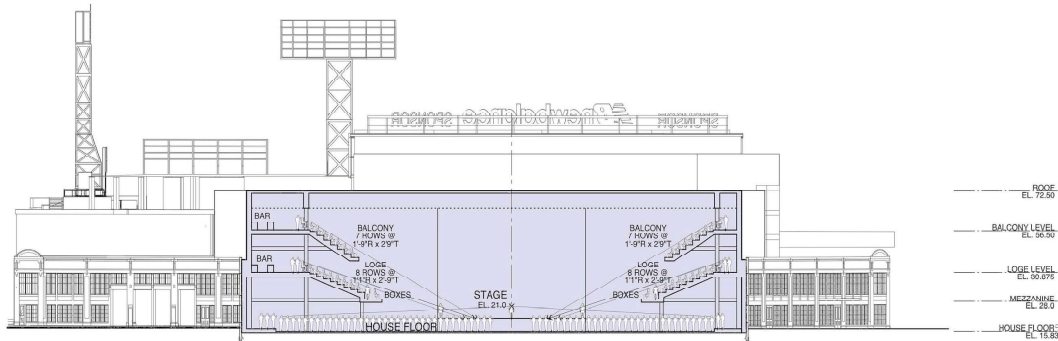
Theater

Fenway Park

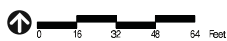
Garage



Longitudinal Section

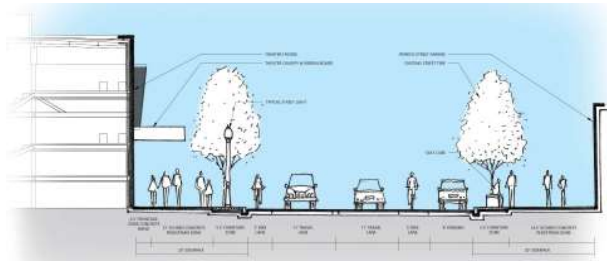


Transverse Section

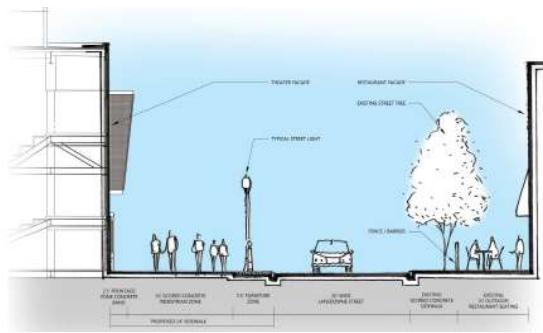


Figures 13-14

Section Plans



Street Section
Ipswich Street



Street Section
Lansdowne Street

Figures 15-16

Urban Impact:

The Project provides a state-of-the-art performing arts center that will host a wide variety of performing arts, educational, and civic events year-round in the entertainment district of the neighborhood. The project increases the cultural significance of Fenway Park, while respecting the historical importance of the park and its neighborhood. The project also projects increase in local business activity, as theater will attract more passerby's to the neighborhood on an annual basis.



Camden Yards

Location:	Baltimore, Maryland
Architect:	HOK Sport (Populous)
Completed:	1992
Typology:	Baseball Park
Size:	430,000 sf



Figures 17-20

Camden Yards:

Camden Yards is a baseball park and was completed in 1992 in Baltimore. The previous home, the multi-purpose Memorial Stadium, had been neglected for years resulting in the Colts moving to Indianapolis. Not wanting to lose another sports team, a new baseball purpose park was built. Camden Yards was the first retro-classic ballpark to be built, with inspiration from the older urban ballparks.



Figures 21-22

Project Description:

Similar to older urban ballparks, such as Fenway, Camden Yards was built into the city. A pre-existing warehouse (B&O Railroad Warehouse built in 1905) in rightfield was incorporated into the site, the warehouse contains offices, service spaces, and a private club. Eutaw Street, which sits in between the park and the warehouse, was created and is closed to traffic, spectators travelling through the concourse can visit multiple shops and restaurants. During game days Eutaw must have a ticket to the game to visit, but during non-game days the street is open to all. Also every homerun that lands in Eutaw receives a plaque in the location it landed.



Figures 23-24

- Railyard
- B&O Warehouse
- Eutaw Street
- Ballpark

Master Plan

Section Cut



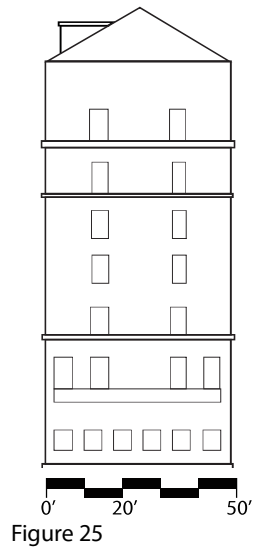


Figure 25



North Elevation Warehouse

West Elevation Warehouse

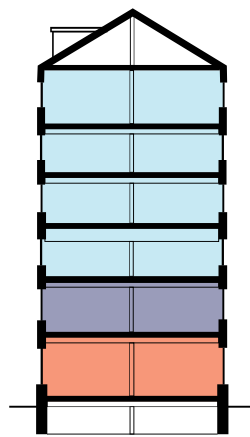
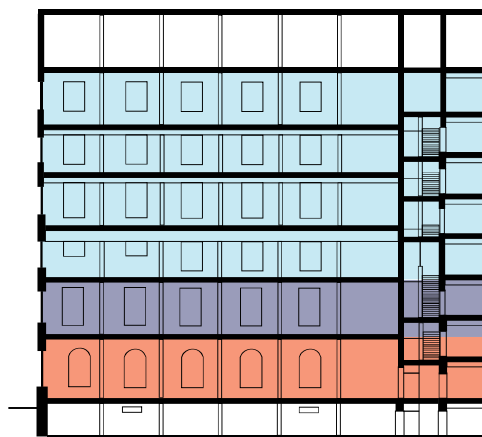
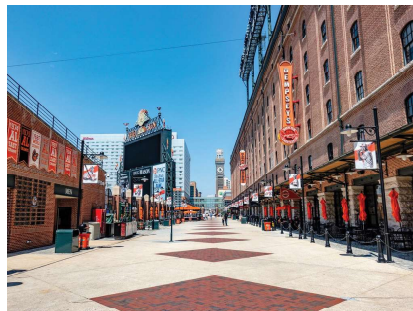


Figure 26



- Retail
- Offices
- Club Offices

Section Plans



Figures 27-29

Urban Impact:

Once the completion of Camden Yards, the B&O Warehouse become instantly iconic and filled out rented spaces quickly, with many going to the Orioles organization. And Eutaw Street has become a popular commercial destination, with Boog’s BBQ being a staple concession, and tourist destination with the Orioles Hall of Fame and homerun plaques. After Camden Yards, several ballparks began scraping their older cookie-cutter multi-purpose complexes in favor for unique retro-classic stadiums placed in more urban environments.



Ballpark Village

Location: St Louis, Missouri
Architect: Cordish Companies
Completed: 2014
Typology: Entertainment Complex
Size: 150,000 sf



Figures 30-33

Busch Stadium:

The current Busch Stadium was completed in 2006 in St Louis, Missouri, replacing multi-purpose Busch Memorial Stadium (1966-2005). In 1995, St Louis Cardinals began lobbying for a new retro-classic ballpark in downtown St Louis, similar to many teams after the construction of Camden Yards in Baltimore back in 1992. The ballpark village, an entertainment district next to the ballpark, was added in 2014.



Figures 34-35

Project Description:

Connected to the ballpark, the St Louis Ballpark Village, is a mixed-use retail, office and entertainment complex, and in partnership with the St Louis Cardinals. The village includes retail, dining and entertainment. It is the first mixed-use development project to deliver the experience of the game outside the stadium.

A three-story building housing the St Louis Cardinals Hall of Fame on the third floor and the Cardinal Nation restaurant on the first two floors, on the roof are seats to the stadium. The Budweiser Brew House includes a beer garden, nightly live music, and rooftop seating to the stadium. FOX Sports Midwest Live! a marketplace and event space with a retractable canopy which acts as the main gathering space in the complex, it connects the Brew House and Cardinal Nation buildings. And several more restaurants and shops which feature a dance floor, soft-seating lounge, and several private balconies. It features music performances throughout the year which bring in more visitors beyond baseball.

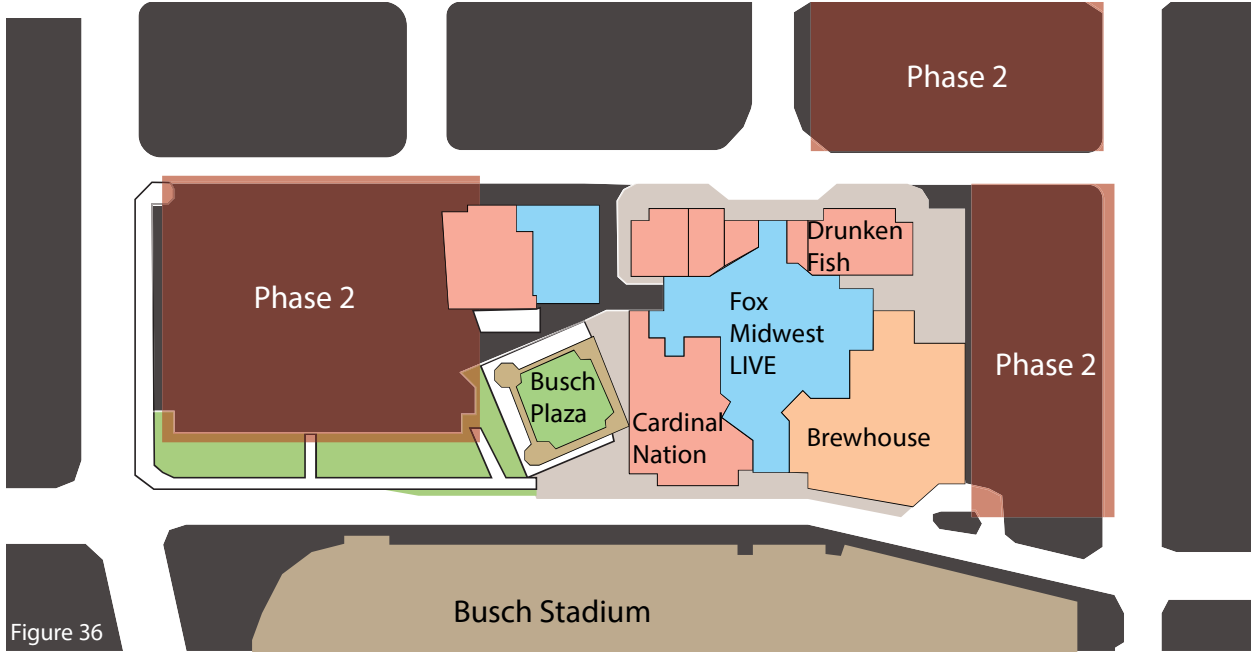


Figure 36

Master Plan

Commonspace Retail Brewhouse



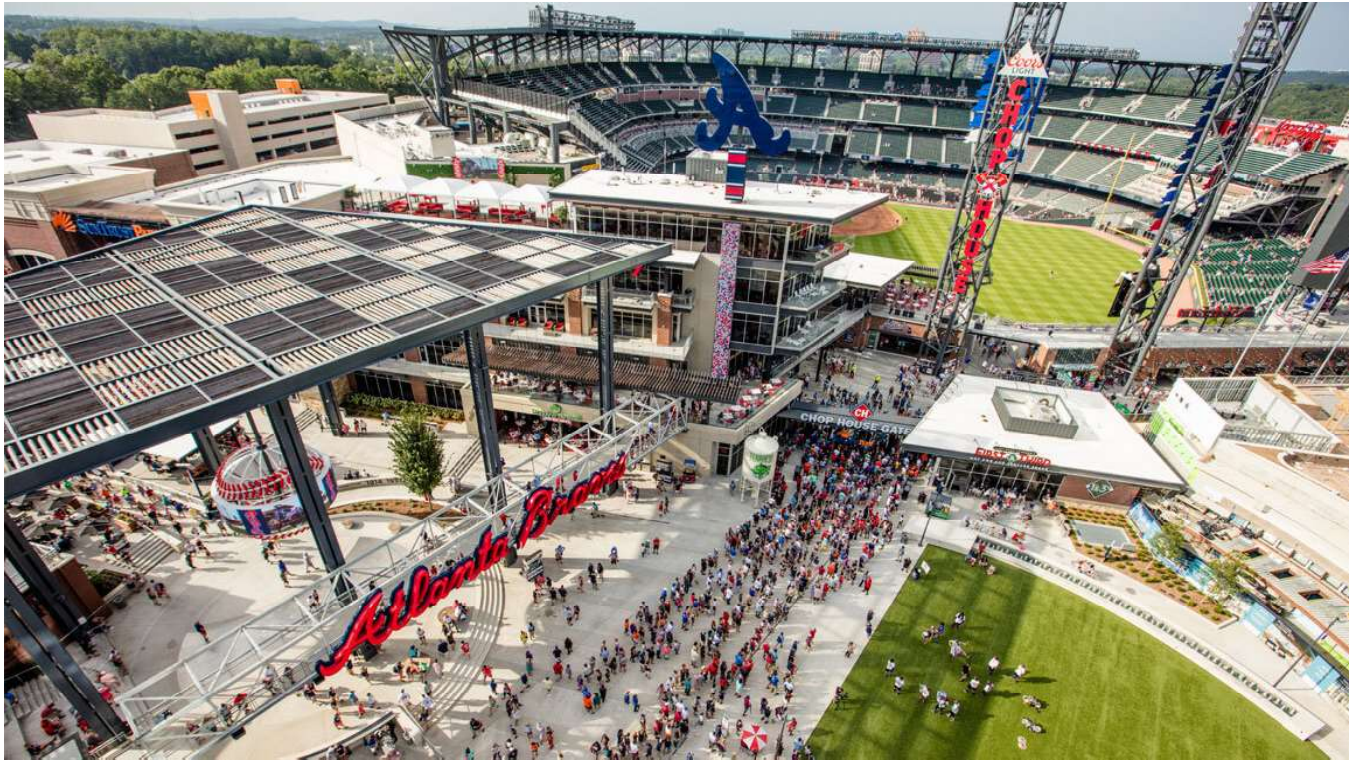
Phase 2 Plan
Figure 37



Figures 38-40

Urban Impact:

The venues offer more than 150 events annually separate from the 81 home games at the ballpark, it is active year-long. A popular destination in the city with around 6 million visitors a year. After the initial success in 2016, a second phase of Ballpark Village was announced. The plan includes a 29-story residential tower, a 10-story office building, an 8-story Live! by Loews hotel, and a 3-story retail building with shops, restaurants, Onelife Fitness, and more amenities.



The Battery

Location:	Atlanta, Georgia
Architect:	HGOR
Completed:	2017
Typology:	Entertainment District
Size:	60 acres



Figures 41-44

Truist Park:

Truist Park, formerly SunTrust Park was completed in 2017 in Atlanta by Populous, replacing Turner Field. Turner Field was originally constructed for the Olympics in Atlanta, and was later converted into a ballpark, requiring massive renovations and structural upkeep. Similar to other retro-classic ballparks, Truist had less seating and parking than its predecessor was focused on baseball, rather than multiple sports. The ballpark's location was chosen because it is in the center of the Braves' fan base.

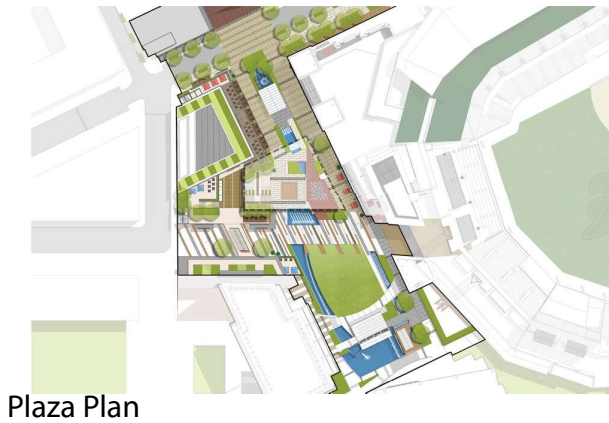


Figures 45-46

Project Description:

The Battery is a large mix-use project alongside Truist Park, it began construction in 2013 and caters to various types of users. Including stadium visitors, office tenants, residents for multi-family buildings, visitors looking for entertainment at the theater, and retail across the development. With a centrally located plaza connecting the new stadium with the surrounding retail, a 10-story office building, and a 264-room hotel.

The Plaza, which is approximately 76,000 SF, was designed for socialization. Maximizing pedestrian traffic while allowing for multiple seating options, from terraced seating to benches. Visitors can enter into the ballpark from the Plaza or by the second floor of the Food and Beverage Building. A performance stage with a LED screen with a main lawn that holds more than 2,000 people, is used for concerts as well as other special events. Another feature of the Plaza is a 80-foot-tall multi-level shade canopy with a suspended baseball sculpture and video board.



Plaza Plan

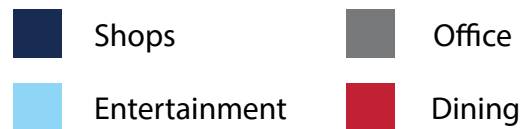


Plaza Section



Master Plan

Figures 47-49



Urban Impact:

The creation of a large mixed-use entertainment development with unique features, functionality, and flexibility created a socially intimate and interesting environment. This “end of the day” program creates a space where people want to spend time during non-game days. With the focus to make a vibrant and active space for year-round enjoyment, the venue builds a connection to the city, acting as a catalyst to revitalize surrounding neighborhoods and encouraging development of the site.

Summary

The purpose of researching and analyzing precedent projects was further development this thesis. All these projects were inquired because they contained various designs over similar typology and context, with various forms of impact and innovation. This series included the unbuilt Fenway Theater, B&O Warehouse at Camden Yards, Ballpark Village at Busch Stadium, and the Battery in Atlanta. These projects offered information regarding the future of sports architecture and how to produce economically sustainable design could reshape the way we think about building near sporting venues rather than isolating them.

Each study's goal was to find something that could guide a program for my thesis project, as well as finding how to improve the design. With the goal of uncovering what was needed, and how to improve the experience, new goals were identified, tweaking and reshaping my original theoretical premise.

Common characteristics besides their connection to the ballpark included, being located in a urban environment and the attempt to connect the project that community. Designed to be multipurpose to accommodate potential needs and wants of their communities. Also, the ability to be used year-long, rather than during sporting events benefits the community and organization as a more economically sustainable option. Since they are in urban environments, many of them rely and promote public transit, removing parking lots in favor of design. Another common characteristic is that they feature a gimmick that focuses primarily on baseball.

Some characteristics that are different involve the size and functionality of the projects. Fenway Theater is a small addition project connected to Fenway, while the Battery is a large scale entertainment district. And the differences are typically due to the different opportunity of space, as Fenway is located in a more dense and confined space that doesn't damage the

context of the neighboring context, while the battery is vast and requires the demolition or compromising of the neighboring context to complete its goal. And unlike the other precedents, B&O Warehouse is a historical preservation project located in a design of a ballpark as the old warehouse simply renovated rather than demolished, and its connection with Camden Yards is iconic in baseball, leading to the popularity of retro-style ballparks.

The studies informed how they affect their environments; socially, culturally, and politically. Each study came across with a similar message: create an extension of the ballpark that enhances the experience and try to create a more sustainable source of revenue. Allowing for social interaction that offers fun and entertainment that enriches the neighboring community. As how to potentially continue growth around the ballpark with future development projects.

Functional and spatial relationships is also similar, with a hierarchy of spaces and balance has the ballpark offering as the main attracter to the space. Often a path is created that leads to a entrance to the ballpark or creates focal points that show importance of a particular space. These projects show the importance of balance and form for this reason. As far as seeing the hierarchy of spaces, it seemed the more important spaces were located the closer you get to the ballpark.

Overall, the case studies mostly back up the theoretical premise, but did influence the premise to move slightly in one direction or another or to expand in a small way. A lot of the information found was very informative into what needs to be done to design around a ballpark, the question now becomes how can it be done better than these precedents have exemplified.

Major project elementsCommercial:

Will provide places to eat before or after the game for those going to the game. Or places for people to view the game if they don't have tickets to the game. Also promote fans to buy the team's merchandise at all times of the year whether there is a game or not.

Entertainment:

offer attractions that will bring visitors year round. It can be a flex space that offers music performances, dancing space, Watch parties, or other public events.

Office:

Offer office space for . It can be rented to multiple businesses and/or use offices for team administration.

Hospitality:

People wishing to visit the ballpark or the city will need accommodation as well as keeping the space populated.

Parking:

Fans who travel by car will need to find a place to park. Currently there is plenty of parking and should be an emphasis on traveling by foot or by public transit.

User/Client description (or audience)

The primary client of this project would be the St. Paul Saints organization as it is neighboring land near the stadium, and would be interested in a baseball oriented district. Also the city of St. Paul would be interested in the redevelopment of the land. It would benefit both the team and the city, as it would redevelop the land near the stadium and create revenue. The challenge would be to create a space that isn't solely for the Saints organization but would also benefit the surrounding community within the city.

Even though the sight is directed more towards baseball fans, anyone can enjoy the experience whether they are a Saints fan or not. Traveling teams also have their own fans, or even if they don't watch sports, it is important to make an engaging environment that welcomes everyone.

The Site

The proposed site is the surrounding area of CHS Field located in St Paul, Minnesota. On the east-edge of the city's downtown, situated in a heavy urban environment, it's an ideal location. I have chosen the site because CHS is a relatively new ballpark, completed in 2015. Located in a city that doesn't have a Major League Baseball team, meaning many baseball fans will want to go to watch a game.

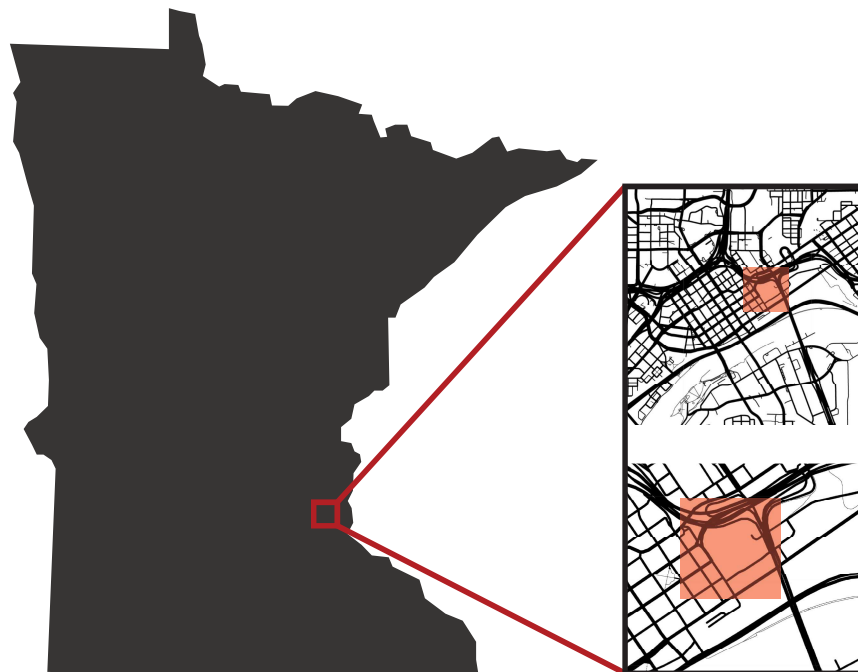


Figure 50



Figure 51

In an otherwise ideal urban setting, there are a few areas of improvement with the site. With proposed site being a warehouse adjacent to the ballpark. The warehouse obstructs the potential improvements to the ballpark. A farmer's market located to the east can be incorporated with the design and function. The site is also within walking distance of Mears Park and the Union Depot. There is also multiple parking lots to the east and south of the ballpark.

Project emphasis

To create a strong connection between a ballpark and the surrounding environment.

How can the surrounding buildings create or enhance the ballpark experience without being in the ballpark?

To create a place that is fun and is better than watching at home.
What sources of entertainment and forms of retail can create a lively environment that engages the fans?

To define and amplify the brand of the city, the team, and the fans
How can it be easily identifiable and associated to the ballpark for those unfamiliar with the area?

Goals of the thesis project

To better understand the relationship between a building and the surrounding environment.

To better understand the authenticity of the place and its population

To embrace the existing environment to enhance designs

Learn what makes an intimate experience that captures the spirit of the place.

To create a product I am proud of.

Plan for Proceeding

Definition of a research direction

Theoretical premise:

To research the idea of connecting the ballpark to an urban environment, would be to look for precedents in architecture that involves sporting venues and entertainment districts. What key features can be identified and improved upon in the future.

Project Typology:

Identify the client and community goals. What are needs, wants, expectations, and values of the respected groups.

Historical Context:

Identify the cultural and social importance that can influence design of project. Also identify precedents that enhanced or changed the local culture or social influences.

Site Analysis:

Conduct a site analysis that identifies existing activities and retail spaces and record opportunities in entertainment, commercial, and mixed-use.

Program Requirements:

Identify spaces that encourage pedestrian walkability. How to unify multiple spaces to create cohesive experience that relates to the ballpark.

Design Methodology:

A system of methods used to arrive at a research conclusion

1. Unifying Idea
2. Topic research leading to discovery of new ideas and tools to help answer related questions and design solutions
3. Testing of the new ideas and tools
4. Formulating of own design opinions
5. Formulate opinions into a proposed design

Quantitative:

Interpret data/information through iterative investigation

Interpret analysis to inform design decisions

Qualitative:

compare conclusion formulated form opinion against the needs and values of the community and client

Exploration:

Examine how quantitative and qualitative answers can influence the design question/answers that come from the design process.

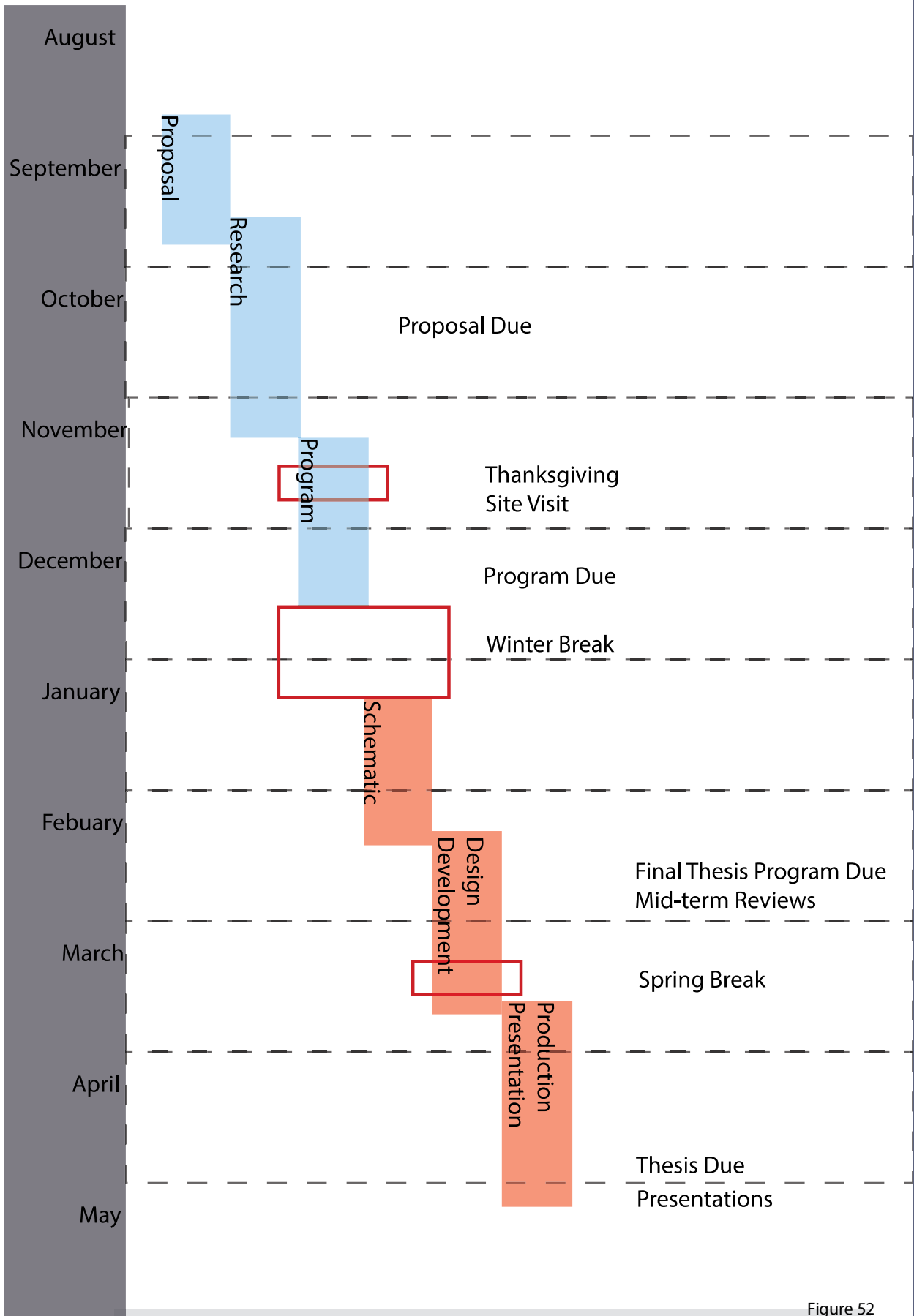


Figure 52

Documentation of the design process

Document Compilation/ document creation

Medium for design investigation:

hand sketching
hand modeling
computer representation

Software for investigation:

Autodesk Revit
Autodesk AutoCAD
Rhinoceros

Software for representation:

Adobe Photoshop
Adobe Illustrator
Adobe InDesign

Design Preservation Methods:

Creation/investigation of representation
Feedback from advisor(s)
Research material documented
Computer files backed up weekly via dropbox, googledrive, and external harddrive
Thesis book updated weekly as per schedule
Drawings/diagrams created upon acquisition in reference section

Publication of Material:

Relevant material will be recorded and credited in final thesis book available:

NDSU institutional repository
hard cover book format

How can context improve sporting events and create diverse environment that is economically sustainable?

Sports are a major part of today's society, as thousands flock to venues to experience the game. The atmosphere during game day is energetic and vibrant, with many stadia having tailgates and events that correlate with the particular event. But many stadiums are isolated from their cities with large parking lots or spaces meant specifically for that sports rather than one of everyday life. By developing a program that creates diverse entertainment and commercial area around a ballpark will enhance gameday experiences and a more economically sustainable design.

The topic of research will include designing a entertainment district that addresses more permanent sources of income and enhance the existing ballpark without damaging the existing neighborhood around the ballpark. The design will combine needs of the baseball organization as well as the city, promoting the sport and the community.

To program the development, research will be conducted to define the economic effects of a stadia; how it effects the city and its neighboring context, the psychology of sports, as well as current inequities at the proposed site in St. Paul.

Unifying Idea: How can the context of a ballpark enhance to sporting experience as well as create a lasting and sustainable form of revenue.

Goal: Design an entertainment district that enhances the experience of the ballpark during gamedays.

Goal: Create a diverse project that offers more ways to experience beyond sporting events, leading to a more active space year-long.

Sports Stadiums do not Generate Local Economic Growth

Many sports organizations promote that stadiums bring economic growth. But according to Roger Noll, a Stanford professor in economics, this not accurate. "Stadiums do not generate significant local economic growth, and the incremental tax revenue is not sufficient to cover any significant financial contribution by the city." Because stadiums are used infrequently – for example in the NFL there are two preseason games, eight regular season games and possibly a couple of playoff games – they do not receive large economic benefits from those games alone. Similar to football, baseball is a seasonal sport with only a few months of the year for the season to be played.

Arenas are a more beneficial for cities, as arenas are used more often, for multiple sports (basketball or hockey), concerts and other events. And since they are indoor venues, they are used year long. Singular purpose sporting venue, they are limited in their events and activities as well as the time available. "By comparison, other billion dollar facilities – like a major shopping center or large manufacturing plant – will employ many more people and generate substantially more revenue and taxes," Noll said.

Stadiums, such as San Francisco 49ers' new Levi's Stadium, may host to several other events, including concerts and college football, soccer and hockey games. But with the increase in internet distribution, real-world stadium attendance will shrink, leading to organizations to make more experiential facilities. With future facilities potentially being embedded into larger commercial and residential projects, with the sports team being like a tenant.

What is done before and after the game?

Many factors contribute to the full experience of a sporting event. It is important to map out the end to end journey; where do they come from, how do they get to the game, what do they do at the game, what do they do after the game. Often, fans like to arrive early and hangout around the venue before the game and linger after the game ends.

Tailgate parties is a very popular event that occurs outside a sport venue, using the area leading up to the venue on game days. This is where several segments of fans can buy food, drinks, merchandise etc. Controlling such events is an influential touchpoint to build a bridge between fans, sponsors, and other team stakeholders with the goal of enhancing the entire experience. For example the Red Sox block off traffic for streets around Fenway Park to allow for tailgates to occur, creating a vibrant atmosphere.

Another is the use of neighboring restaurants, they offer an alternative source of food before or after a game. Concession at the stadium may be considered more expensive, in which fans may want to eat before or after the game at an available outside location that is often near the venue. Also, alcohol is removed near the end of the game resulting in many fans to leave to find a nearby bar that serves alcohol during or after the game. And if you don't have a ticket, restaurants and bars near the venue may have watch parties that attract fans who do not have tickets, offering a new experience.

For any professional sports team, it is important to get people to attend the stadium as long as possible, spending time and money. To attract families, pre-game parties and contests inside or around the stadium before the game are arranged, a 'fun zone' entailing kid-focused activities, contests, sponsor activation, sampling, music or lotteries. Post-game parties at stadium, club, or restaurant can be done in a similar fashion but with a more adult focus.

Sports, Architecture, and Culture.

Sports provide a variety of options of entertainment as well as a platform to overcome differences and encourage dialogue, sports itself can enhance social and cultural life by bringing together individuals and communities. And architecture is the material in which reflects those cultural and social connotations found at sporting activities. The sports offer a diverse range of traditions and cultures with architecture offering citizens the experience both inside and outside of the sport. The diversity and uniqueness of the sport and its architecture enriches urban cultural life, in particular the diversified function, makes us feel of competitive sports, but also brings a colorful cultural experience.

Sports architecture has social attributes, with those attributes encapsulating the sports building's environment. The sport event is first experienced on the exterior of the structure. as spectators make their way to the structure, the openness, shape of the space, the surrounding context, all play a factor. These spaces will make a unique experience and feeling, the humanistic values from the designers while enjoying the sport. Activities such as tailgates, where several segments of fans can buy food, drinks, merchandise etc. Such events are an influential interaction to build a bridge between the stadium and its environment. The incorporation between the exterior spaces and the interior spaces makes us notice physiological necessities and mental sentiments that we want to revisit time and time again.

Large sporting events gather equally large crowds promoting the urban development of the area. The gathering of spectators promotes the team or sport's popularity, with the context of the stadium improving and enhancing the urban image of the city or community. From a macroscopic perspective, if we compare the city as one life body, so the sports building can be regarded as one cell in it, which will significantly influence the city by its location, spatial size, facility layout, project selection, etc. We can analyze the great driving force of sports facilities building to urban development from such aspects as follows.

Experiential Interests

Fans are interested in having fun and new experiences that are unique to the given event. If a space is generic and similar to other experiences, offering nothing new or fun, fans are less likely to go. Attractions can create that experience, and offering a variety of diverse and unique attractions will increase the interest of visitors. About 82% of fans have said they would pay extra for more unique experiences and 84% said they want a more multi-destination experience (Santee).

Unique food and beverage destinations (F&B) offer a diverse variety of concessions and often a complimentary option to ballparks and other sport venues. They can include restaurants, markets, brewhouses, or simple concession stands. They can be found inside or outside ballparks, with the latter offering more options in food as well as being more frequently used.

Roof and enclosure spaces above the ballpark also offer as a attracter, they offer views to the ballpark that cannot be seen from the ground level or from inside the stadium. They are usually open, allowing for multiple forms of passive design, such as daylighting, natural cooling, or green roofs. They can be connected to F&B destinations to create spaces like beer gardens that offer a completely different experience than ticket-goers. Additional seating for the ballpark can be added to increase capacity.

Stadium Architecture - A Review of Literature of Stadium Architecture on Urban Development.

Abstract.

This paper provides an overview of the literature, "Stadium Architecture and Urban Development from the Perspective of Urban Economics," on the relationship between a stadium and urban development. Exploring for a stadium to be suitable for interaction, it must rely on a built environment. It looks to summarize the reviewed literature on sporting venues' effect on income and employment at an urban scale as well as the architectural quality itself. Stadia and other sporting venues are intended to serve as entertainment and tourist attractions for their hometowns to accelerate urban redevelopment. By discussing current transitions in international stadium architecture, demonstrating important trends. Using architecture to support area rehabilitation or amplifying the image of the neighborhood and spending effects produced by professional sports.

Summary.

The article overviews multiple stadiums, with many being built in the last thirty years, their lasting effect on architecture and on urban development in their communities. Frequently, claims have been made about how new stadia and sports events have beneficial impacts on the economy. But economic studies suggest that neither the events or new constructions are linked to considerable increase in income or employment on a regional or local scale. In the article, international examples show how the architectural quality and urban design, that are considered unconventional, can create new landmarks and boost successful urban development policies. With empirical evidence showing that architecture contributes to more than the business economy.

Many sporting constructions around the world have had problems with increasing economic value and urban development in their communities.

Even though they are built with state of the art technology, unique structures, and meet comfort and safety, their designs are conventional and 'functional.' Mostly privately financed with a singular function and purpose. They are massive feats of engineering and achieve a monumental and innovative character, but don't serve their communities on a municipal level. The stadiums are isolated from their surroundings, typically situated on the city outskirts and surrounded only by roads, parking, and other infrastructure. More unconventional forms of design and urban development have been used recently to create new stadiums to boost local development. These new ideas look to create iconic sporting structures, not just based on their architecture but also their surrounding environment. They need to be aware of their locations and use the urban fabric that surrounds them. They are usually within walking distance of the city centre and often beside a body of water. But plans may receive opposition among the citizens, with the notion 'not in my backyard' but gradually changes overtime to a feeling of regional pride and identification.

Projects that were built with a plan that look beyond a singular purpose or event, as well as embedding the stadia into the urban fabric, neither obscuring or dominating their surroundings, were more successful long-term when compared to those that weren't. Particularly in densely populated inner-city districts, they used the sporting event to enhance their communities; by renovating the city's districts, improving infrastructure, as well as building a new urban district. With the projects planned strategically, a more thorough and thoughtful urban development that connects urban spaces. Showing how a mega-sports event can be used to redefine a city in a larger context.

For a stadium to be justified economically, it must demonstrate not only the stadium's profitability but also have positive effects on their surroundings. Empiricism shows that the built environment enhances value through the perception of participants. The Olympic projects in Barcelona show how

sports projects, when they are ambitiously designed and integrated into their surrounding cityscape, can lead to a more attractive urban environment. While projects such as the 2006 World Cup in Germany with isolated sports stadiums not utilizing the urban fabric fail to create a rich and diverse environment. However, empiricism is still new and there is not enough information to assert which city-building measures can be expected to maximize public benefit economically. Greater number of suitable new construction projects should be investigated.

The article concludes that at the city level, iconic buildings and environments generating an increased influx of mass tourism generated should be the primary aim, as only a small group of tourists passionate about architecture might appreciate the stadium's architecture. Monolithic stadium structures, on the outskirts of cities and isolated by roads and parking and the absence of the urban fabric have no charisma. Especially when public funds are committed, planning authorities should ensure that stadia are not only designed with respect to profit maximization for the respective sports team, but also follow an integrated concept that minimizes proximity cost by providing sufficient parking facilities and avoiding long access paths leading through residential areas. Unconventional stadium architecture may additionally be employed with a design vocabulary appropriate to either the rehabilitation of the area or to amplify image and spending effects.

Creating Iconic Stadiums.

With arenas and stadiums found all around the world, many of which vary in size, architecture, and urban fabric. With respect to their embedment into the existing urban fabric, almost all of them are easy to identify and recognize from one another, many possessing a strong metaphoric character. Examples include the Olympic Stadium in Peking known worldwide as the 'Bird's nest', Munich's Allianz Arena is known as the 'Rubber dinghy,' and the Velodrom in Berlin has been compared to that of a UFO.

Recently architecture and urban design are experiencing a significant rise in a globalized economy. Cities increasingly compete for higher quality of living to attract tourists, firms, and workforces. More unconventional and sometimes iconic architecture can be used to create new landmarks and boost local development, generating positive spillovers for the community or neighborhood. The use of public funds to cover the additional costs that arise through adopting an unconventional stadium architecture may be justifiable in economic terms. Iconic structures reveal certain common characteristics: they are usually within walking distance of the city centre and often beside a body of water. They can be characterized by an architecture that is highly innovative. But plans can be so unconventional they create opposition among the citizens, but gradually changes overtime to a feeling of regional pride and identification.

Poor Sporting Development.

At the 2006 Soccer World Cup in Germany, various organizations, including banks and universities provided their economic inquiries. Positive effects such as a long-term increase in the number of visitors, the establishment of new industries and so on are claimed for the period following the event, but in most cases the claims do not have the back-up of appropriate data. But at the 2006 World Cup, only a few cases had demonstrated statistical effects on revenue and employment, with only a few cases possible to demonstrate positive increases. While the German World Cup venues were full of technical innovations and meet comfort and safety, their designs were conventional and 'functional.' As German World Cup stadiums were 75% privately financed with the sole purpose of soccer. For example, among the German World Cup stadiums, is the Allianz Arena in Munich. The arena achieves a monumental and innovative character, by its unique structure and utilizing lighting that leads to the stadium. But the stadium is isolated from its surroundings, situated on the city outskirts. It is surrounded only by roads, parking, and other infrastructure, ignoring any attempt to develop what might otherwise be regarded as attractive.

Successful Sporting Development.

More aligned with creating an embedded design of sports into urban development transformation, the 1992 Olympics in Barcelona represents the opposite of mega-sporting events compared to the 2006 World Cup in Germany. The development combined multiple projects including restoration of the historical buildings, in the Gothic Quarters and Montjuic, and the construction of ring roads around Barcelona's metropolitan area, the opening up of the sea front of the city, including the renovation of harbor and beach areas, representing the major Olympic construction work. A 130 hectare parcel of industrial land formerly separated from the rest of the city along the coastline was constructed into the Olympic Village. After the Games, Barcelona had renovated its historical districts and had a new district with buildings at the waterfront connecting to the beaches as an important leisure facility for both residents and visitors.

Conclusion.

By enhancing the urban context around a sporting stadium or event, it further increases the sport experience as well as economic growth, increasing urban development. Residents, tourists, workforces, and firms will be more attracted to these highly developed areas for their diversity in entertainment and businesses. With a more interaction and a more sustainable economy, the value at a local development will grow. The architecture creates an iconic and unique environment that benefits its community and identity, improving the quality of life in the area.

Architecture and Sports - A Review of Literature of Sports Architecture on Urban Development

Abstract.

This paper provides an overview of the literature, "Life and Sport- Analysis on the Influence of Sports Architecture on Urban Development," on the relationship between sports architecture and urban development, specifically in China. It follows the relationship between urban development, the urban environment, and culture, with that of the sports building. It looks to summarize the reviewed literature and use of design demands and the transformation of their roles and function, as well as the trend of diversified development in sports building that offers a synergetic and harmonious design for social, economic and cultural development are being proposed. Then by using external sources, on the history of ballparks, sports culture, and economic sustainability that correlate with the same issues and come to a similar conclusion.

Literature Summary.

According to the article, "Life and Sport," sports bring potential interest for urban development. Creating a relationship between urban development, urban landscape environment, urban culture, and the sports building reflecting the design demands as well as the transformation of function of their communities. With a diversified development of sports building; the social, economic, and cultural development create a harmonious and synergetic design. And with the fast development of cities, citizens are seeking richness of mind, urban sports facilities have become an important part of urban construction.

By gazing at the development of a city; its industrial structure, the technology, the humanistic value, etc. we can further understand their experience and their transformation. Cities develop differently, depending on locations, natural resources, historical and humanistic resources, with urban development relying on a comprehensive understanding of the city themselves.

Physical exercise is universal for all the people, which attracts a high participation from the public, and large-scale sport league matches help to improve the communication among cities, and stimulate the urban economy.

Discussing the current issue of stadiums in China, with stadiums in Chinese cities are not suitable for urban development, they serve a single function and are inconvenient, which doesn't serve well to citizens. The stadiums are used infrequently throughout the year, becoming parking spots or just deserted. Other projects build large comprehensive sport facilities, the huge construction input and high maintenance cost fails to bring positive social and economic effect, deteriorating its community.

Understanding the development of the social environment, with design research of sport extending from the building body to a wider field beyond the sports building. Turning a substantial space into a social and cultural space, from a structural shape to a psychological and behavioral structure, from the pure function to the sustainable development of economy and ecology. By creating a diverse and unique environment that represents its community and its culture.

Sports architecture has developed rapidly, with research its scope expanding beyond the sports buildings itself to a much wider field. Conveying sports architecture as part of the cities perspective rather than a separate entity. Sports architecture is not just a simple element in urban areas, but should be regarding the design of sports architecture with the promotion of diversity and sustainability.

History of Modern Sports Architecture in the US.

During the twentieth century the development of sports architecture had seen major changes every few decades. Constantly evolving, these sport buildings saw several generations each with different variations of form, functions, and ideologies overtime. Each generation of venues had lasting effects in their surrounding environments and contributed to the sports

buildings economic and cultural value. According to Earl Santee, who specializes in sports architecture with Populous, says there are four main generations of ballparks.

In the beginning of the twentieth century, venues were built within urban neighborhoods and cities, known as urban ballparks, with venues such as Fenway Park or Wrigley Field. These venues were smaller in size compared to their current day counterparts, with most seating less than 30,000 spectators. Practical in form and usually serving a singular event, like baseball or football. Fitting into the existing urban environment they often had unique features and dimensions and created a unique individual experience. Due to each venue's individuality and context they were easy to identify and synergize with their communities. Only a few of these old urban sports buildings remain today with the aforementioned ballparks being the most notable.

The second generation of venues being the Stadium began to take place in the 1930's, larger in size compared to the urban ballparks and continued to focus on singular sporting events. Examples would include Old Yankee Stadium or Tiger Stadium. These new stadiums tried to maximize the amount of seating, to increase gameday profits, increasing seating capacity beyond 30,000. Urban ballparks also began to expand to increase in size and capacity to compete with the newer and larger stadiums. While still built in an urban setting, their forms began to become more symmetrical as well the stadiums began to be built with parking lots. With cars becoming more accessible to the public, the focus of places for individuals to be able to park near the stadium began to take place.

The third generation were the multipurpose complex stadiums, which began to take place during the 1960's. Typically serving multiple sporting events, hosting both baseball and football rather than just one or the other. These complexes looked to maximize seating capacity, with many reaching beyond 60,000 spectators. Examples of these are the Three Rivers Stadi-

um, Veterans Stadium, and Fulton County Stadium. These multipurpose stadiums were known for their symmetrical donut-shaped structures and large parking lots. Built on the outskirts of the cities, these stadiums were surrounded by large parking lots, as cars became increasingly more and more popular during this time period. As television became increasingly more popular as well, less and less fans turned up to stadiums, as they could watch the game at home. By the 1990's many of these stadiums were run-down and have been replaced with newer singular purpose sporting projects.

The fourth generation of venues is the experiential ballpark of the 1990's to the present day. The latest form of stadium began with the notable construction of Camden Yards in 1992 in Baltimore. A retro-ballpark, the designers looked to recreate the older urban ballparks, like Fenway or Wrigley. Looking to focus on the experiences; the experience of the game, of the fans, and of the communities around the ballpark. These ballparks were built back into urban environments, as they often used the city skyline as part of their design as well as creating more asymmetrical ballparks. After the completion of Camden Yards, many other experiential stadiums were constructed, with nine of the thirty stadiums being built before 1992. And with the rise of the internet and improvement in television, ballparks have continued to focus more on creating new experiences for spectators rather than focusing on filling the max amount of seats.

Sports, Architecture, and Culture.

Providing a variety of options of entertainment as well as a platform to overcome differences and encourage dialogue, sports itself can enhance social and cultural life by bringing together individuals and communities (Culture and Sport). And architecture is the material in which reflects those cultural and social connotations found at sporting activities. The sports offer a diverse range of traditions and cultures with architecture offering citizens a greater experience both inside and outside of the sports building. The

diversity and uniqueness of the sport and its architecture enriches urban cultural life, in particular the diversified function, makes us feel of competitive sports, but also brings a colorful cultural experience.

Sports architecture has social attributes, with those attributes encapsulating the sports building's environment. The sport event is first experienced on the exterior of the structure. As spectators make their way to the structure, the openness, shape of the space, the surrounding context, all play a factor. These spaces will make a unique experience and feeling, the humanistic values from the designers while enjoying the sport. Activities such as tailgates, where several segments of fans can buy food, drinks, merchandise etc. Such events are an influential interaction to build a bridge between the stadium and its environment (Cortsen). The incorporation between the exterior spaces and the interior spaces makes us notice physiological necessities and mental sentiments that we want to revisit time and time again.

Large sporting events gather equally large crowds promoting the urban development of the area. The gathering of spectators promotes the team or sport's popularity, with the context of the stadium improving and enhancing the urban image of the city or community. From a macroscopic perspective, if we compare the city as one life body, so the sports building can be regarded as one cell in it, which will significantly influence the city by its location, spatial size, facility layout, project selection, etc. We can analyze the great driving force of sports facilities building to urban development from such aspects as follows.

The Problem of Sports Stadiums.

Despite the amount of money being spent on stadiums and the promise of economic growth, stadiums don't guarantee that promise. NFL stadiums do not generate significant local economic growth, and the incremental tax revenue is not sufficient to cover any significant financial contribution by the city (Parker). Similar to stadiums in China, with events being infrequent,

with an example of the NFL having two preseason games, eight regular season games and potentially only a few playoff games during a season. Many would visit the stadium for most of the year which is not economically sustainable from games alone. And similar to football stadiums, ballparks are limited in the amount of events and activities played, as most games and events taking place during the summer. By comparison, other billion dollar facilities, such as shopping centers or a large manufacturing plant, which will employ more people and generate more sustainable revenue and taxes.

Solution.

Venues that offer multiple events throughout the year, such as arenas, are more ideal for cities (Parker). They are used more often and offer more options, including for multiple sporting events and concerts, generating more sustainable revenue year-long. Single purpose stadiums and venues still have tremendous value, as professional sports generate larger revenue distributions from the internet, stadiums are leading towards more luxurious and experiential facilities and stadiums. Another alternative for ballparks or stadiums venues is that future sports projects and facilities will be embedded into larger commercial and residential projects, with the sports team acting as a tenant offering their resources to the public. These new mixed-projects built near stadiums offer a more sustainable form of income as well as adding diversity to the stadium, enhancing the sports experience (Parker).

Conclusion.

Sports architecture, such as ballparks, have changed throughout the years; from being built into the pre-existing environment, to surrounded by parking lots, and then back into the cities. And now they look to convey a positive perspective of a city and its architecture. The continuation of public multi-use developments near sporting events provide potential diversity and sustainability. More consideration should be made into the relationship between the sports building and its urban environment, by analyzing its

surrounding context and the culture of sports and its community. With the relationship between sports stadiums and surrounding context, both of which aim at making the sporting event a better experience, and contributing to urban development.

Why is the project important to me?

The reason I chose this project is that I love sports, and the gameday atmosphere that comes with it. But when games are not played the areas around sports stadiums are widely empty and vacant of excitement. I believe, by adding more urban context to a sporting venue, it can create a more enjoyable space year long.

Why is it important for you to do this project at this stage of your academic development?

I think this project is important at this point in my development to express what I have learned through my academic career. After taking classes on urban development, Revit software, passive and active systems; I hope to show multiple techniques, thoughts, and ideas through the project.

How is the project going to add to your knowledge base?

With the process of research becoming more intensive and thoughtful, more questions will rise from the situation and will need reflectance and answering. Understanding in greater detail how this correlate with one another as well as cause and effect.

How is the project going to add to your set of skills?

This project will increase my skills in multiple forms of software including; Revit, Photoshop, InDesign, Illustrator, and rendering. Conceptual and schematic design skills will also improve as I progress through the design.

Why is doing the project important for the profession at this time?

There has been new forms of urban development when it comes to sports venues. With sports organizations expanding beyond their stadiums, constructing entertainment districts around the stadium or venue. They offer space around the stadium to explore, but focus to primarily on sports rather than their communities.

How can you justify the project economically?

Currently, many sporting venues, especially single purpose stadiums, have a lack of sustainability when it comes to economic growth and urban development. They promise growth, but that often isn't the case, as they are often vacant spaces when sports are not active. I want to create a urban environment that emphasizes its community and used year-long making it economically sustainable.

How can you justify expending the funds to implement the project?

Where might the funds come from for your project and are the sources justified?

Potential funds of the project would come from the city of St. Paul, working in coordination with the St. Paul Saints. Funds would be justified as it would benefit the local community and city, creating a space that is diverse and enhances entertainment. A space that is diverse and used more frequently will have more sustainable revenue year-long.

What would be the post-occupancy impacts of your project? Would these impacts justify your project?

The project will create a more permanent space that is used year-long. Rather than focusing on the infrequency of sports, it looks to create a more flexible space that can be used within its community as well as in conjunction with sports.

Why is the project important to be implemented in its social context?

Sports are social events, bringing crowds to spectate. By creating a space that enhances the sports environment during game days. But when it's the offseason or an away game it looks to a separate attraction when sports are not taking place. It is important to understand how social spaces work and what makes them successful.

Why is the project important to be implemented in its cultural context?

Sports are also cultural, examples range from the sport's popularity, the team's popularity, team identity, history, and rituals; a fan in Boston will more likely follow teams from Boston than one in Los Angeles. Also, the community around the venue will often promote the sport and identify with the team at a higher rate. And outside of sports, history is a major factor in culture, and with the site being in a historical district it offers a rich environment to proceed in the project.

How is the project justified in its chosen site location?

The site is in a urban environment, offering context, but a Metrorail warehouse along the side of the ballpark is dull and unattractive, with all parking to the north, fans have to walk past the blank façade and its railyard. Also a farmers market is across the street on the south of the ballpark is used for parking most times of the year, only available on weekends except during the winter. By removing the warehouse and creating a pedestrian street for fans, it would create a more engaging walk to the stadium, and creating a permanent market over the existing farmers market would increase the usage of the space.

Is working on your project an imperative, or is it just an option?

My project focus should be essential to sports architecture. Sport venues are often isolated and separate from the city they reside in, offering little excitement when sports are not active. By creating context around the ballpark, it creates a diverse and vibrant space creating excitement beyond sporting events.

St. Paul / Lowertown

St. Paul is the capital of Minnesota and was founded in 1838 along the Mississippi River. With a population of 300,000 residents, it is the 2nd largest city in the state and 63rd largest in the United States. It part of the Minneapolis-St. Paul metropolitan area (also known as the Twin Cities) home to over 3.6 million, which is the 16th largest in the United States (stpaul.gov).

Between the 1960 and 1980 the city's population had declined from 310,000 to 270,000. Since then the city of St. Paul had been on the rise increasing to a population to 285,000. In 2019, the estimated population was back above 300,000, increasing by 8.1% since 2010 (stpaul.gov).

Lowertown Historic District is a historic district in the city, it is mainly comprised of buildings built between 1870-1920. The district was listed on the National Register of Historic Places in 1983 for its significance for its connection to the river and railroad, as well for its economic impact, architecture, and urban planning.

In 1982 the St Paul Farmers' Market moved to Lowertown, attracting 20,000 each weekend over the summer. The creation of the metro line that runs between St. Paul and Minneapolis has continued the redevelopment the city and the district. With restoration of the Union Depot, other attractions including restaurants and festivals. In 2015, CHS Field was completed in Lowertown.



Figures 53-55

St Paul Saints / CHS Field

The St Paul Saints were formed in 1993, named after the two previous interactions of the Saints (1894-1899 and 1901-1960). They originally played at Midway Stadium until 2014. Previously a member of the American Association of Professional Baseball league, an independent professional league, and in 2020 became the Triple-A minor league affiliate of the Minnesota Twins.

CHS was completed in May, 2015 by contractor Ryan Companies. The total cost of the project was \$63 million with the city providing \$19 million and a \$5 million internal loan, and the St. Paul Saints provided \$11 million, and the state of Minnesota provided a \$25 million grant for the construction (stpaul-saints).

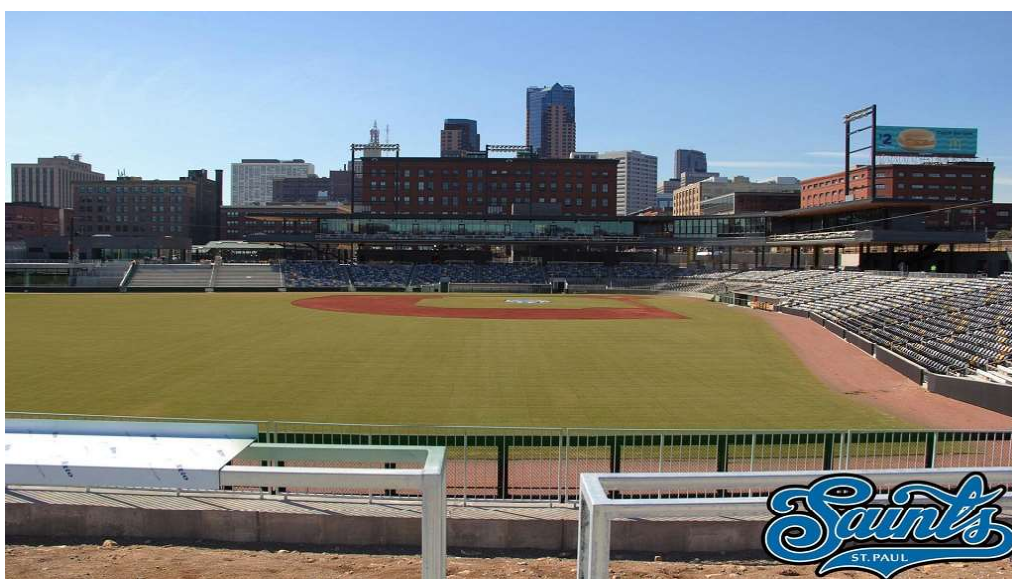
CHS Field is owned by the City of Saint Paul and operated by the St. Paul Saints. CHS Field is located three blocks from the Union Depot stop on the Central Corridor Green Line light rail. CHS Field also has access to several bus lines and connects to biking and pedestrian trails.



Figures 56-58

Built on the former site of a long-vacant Diamond Products/Gillette industrial facility. CHS Field created an opportunity to clean the soil and build a multi-use, year-round facility that fully utilizes the site, creates new connections into downtown, and is compatible with the historic Lowertown neighborhood.

In addition to hosting St. Paul Saints games, CHS Field hosts baseball games for the Minnesota State High School League, Hamline University, the Minnesota Intercollegiate Athletic Conference (MIAC), and American Legion teams. The state-of-the-art facility will make it possible for Saint Paul to recruit and host national baseball tournaments, such as the American Legion World Series and the NCAA Division II or III Championships. The CHS Field hosts more than 100 non-baseball events annually. Potential events include Winter Carnival activities to world-class concerts to fundraisers.



Figures 59-60

Baseball

Sports are a great source of entertainment, with baseball given the nickname America's Pastime. Previously, the sport has always focused on how to fill capacity of their events. Before they relied solely on the sport to attract fans, having large stadiums surrounded by parking lots. Now, they are building smaller and more luxurious facilities to draw fans in.

Creating a unique experience that captures the sense of place, embedding the sense of community at the ballpark. Creating a place with something for every fan that is diverse, intimate, and affordable. A place that allows for interaction between fans, giving a connected experience and shareable moments. The goal is to create an experience that is better than what you would be able to watch at home.

St Paul / Lowertown

The state's capital is the second largest in the state, behind Minneapolis. And a population that has been on the rise since the 1990's, with a projected population of 344,000 by 2040. Approximately 28% of the city's population is under 19 years, and the majority under the age of 35 (50.2%). The majority of the city is white (51.4%), but the diversity of the city has been increasing. And from 2008 to 2013, the city mostly saw reductions in poverty rates (stpaul.gov).

Lowertown within the last decade has become a popular destination to live in, as it was ranked in the list of "top 10 up-and-coming neighborhoods around the USA" by USA Today in 2013. A large amount of the districts population is under the age of 35. Many restaurants, festivals, and art installations are present in the district.

Public Art At CHS Field

Public art is very prominent at CHS Field available for the general public to enjoy and as a way to incorporate the residents of Lowertown. Taking place in two ways: a public art piece at the Broadway Entrance and the Andy Nelson Artist Gallery inside the ballpark. The Andy Nelson Artist Gallery located behind the home plate at CHS Field is named for the artist responsible for the murals and other artwork displayed at Midway Stadium (1993 – 2014). This space features a local artist and their art during each Saints game.

St. Paul Saints have placed an importance on art and creativity in their culture. When the team relocated to Lowertown, they collaborated with the local art community and infused CHS with the artistic spirit of Lowertown. Resulting in the development of a “Community Art Program,” combining public art, community art activities, and opportunities for local artists to display and sell their work.

During home games on Friday, Saturday, and Sunday, the Saints offer free all-age art activities and demonstrations by local artists. Activity locations vary, look for the Traveling Art Cart on the concourse or at the Saints Art Tent by the Kids Corner.



Figures 61-62

Chuck & Don's Dog Park

Connected CHS Field is the Lowertown Dog Park. The community advocated strongly for its inclusion, becoming a unique feature of the ballpark. It features a new dog only drinking fountain, lots of space to run, a central area for dog owners to gather, lighting and will be open during typical park hours of sunrise to sunset. Chuck & Don's Dog Park is 17,585 square feet and is handicap accessible (saintsbaseball).



Figures 63

St Paul Farmers' Market

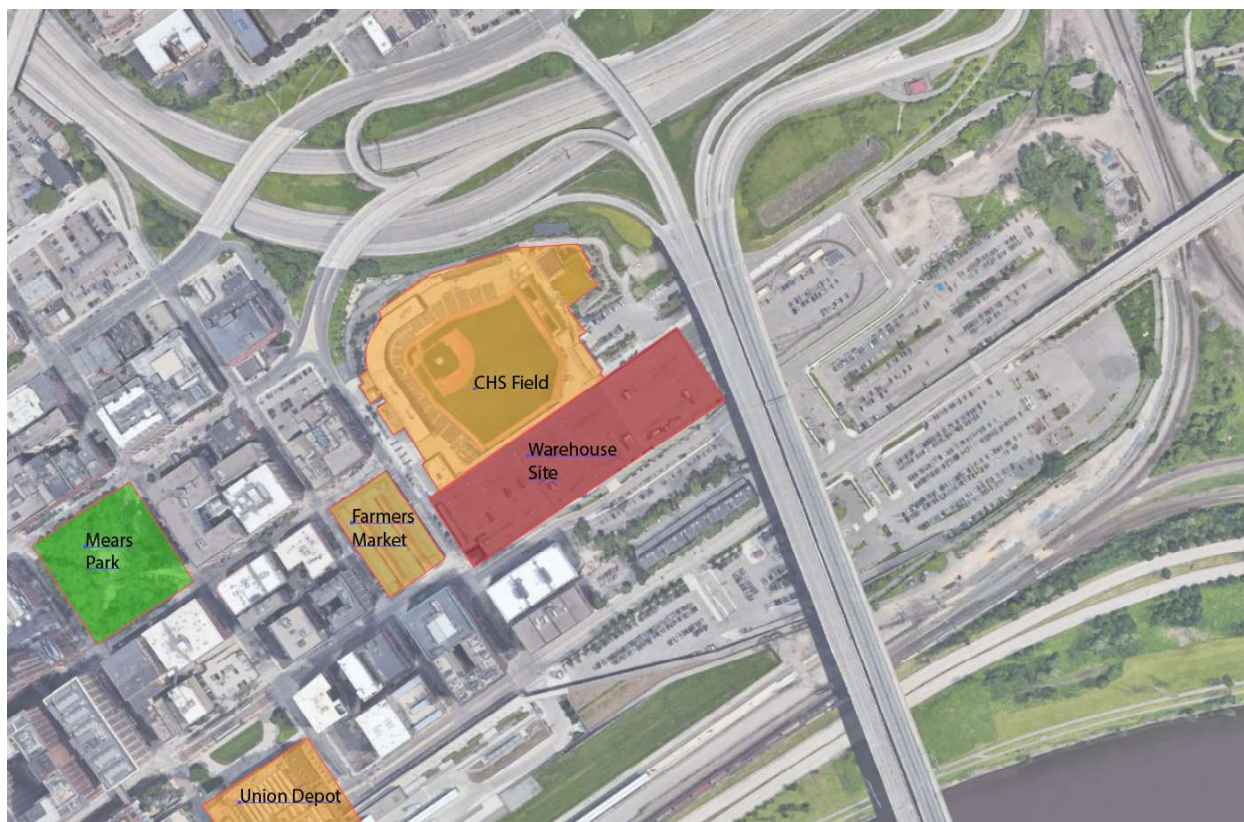
The creation of the St Paul Farmers' Market began in the mid nineteenth century. The Market has had several homes during its long history, but always in the downtown St. Paul area. In 1982 the farmers' market moved to its current location on Fifth and Wall streets after the construction of the freeway. The Market is operated by the St. Paul Growers' Association, Inc. The fresh, locally grown produce is sold-- directly from the grower to the consumer -- for over 150 years. Open from May-November Saturdays: 6:00 a.m. – 1:00 p.m. Sundays: 8:00 a.m. – 1:00 p.m.



Figures 64

Lowertown

The site is located on the east edge of the city of St Paul just north of the Mississippi and next to the freeway. Many of the buildings were built between 1870 and 1920, with the main exception being CHS Field. The historic buildings give the neighborhood its character. Parking lots cover a large area east of the ballpark, including the Union Depot lot. A few blocks southwest is the Union Depot, the major transit building that is the final stop of the MetroTransit that connects St Paul with Minneapolis. Bike trails and small roads extend east beyond the railroads connecting to Lowertown to neighborhoods further east.



Site Plan

Site ■

Park ■

Important Building ■

Figures 65

Parking

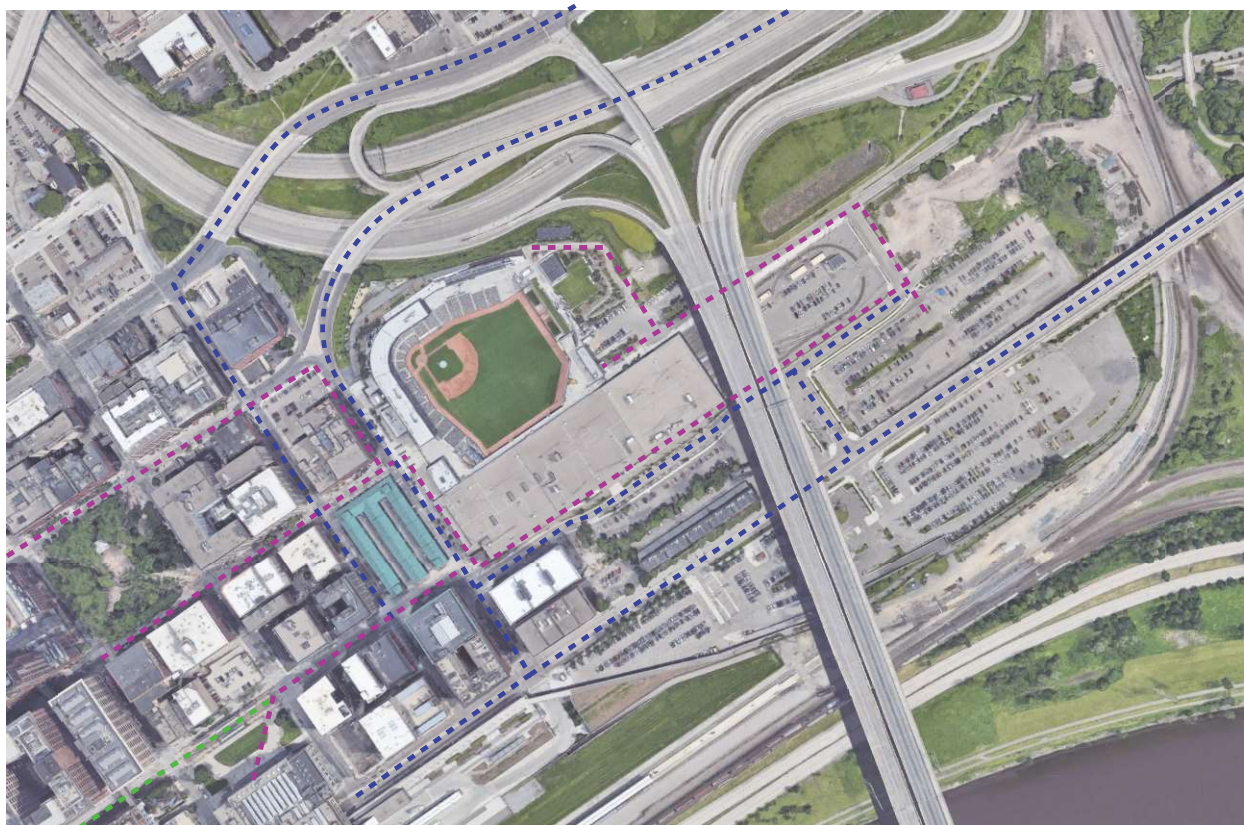
Parking can be found throughout the city, offering multiple spaces to park around the ballpark, most of which require paying. The prices are cheap, with most costing about \$5 during games. Many fans utilize the public transit as well, with the Union Depot a few blocks away as well as buses that stop at the ballpark. With parking and public transit stopping nearby, fans will still have to walk to get to the entrances of the ballpark, leaving space to design program.



Figures 66

Circulation

Located at the edge of the city and next to the freeway, there will be a large amount of traffic in the area. With the majority of vehicle traffic coming from the freeway for fans from the neighboring cities. The vehicle traffic mostly arrives from the north and south. With the Union Depot most of the pedestrian traffic will come from the west. Fans who park in the tailgate lots and Union lots will have to pass the warehouse and the railyard. With two entrances to the ballpark, the majority will enter through the main gate which is located on the westside of the park on Broadway.



Site Circulation

Pedestrian

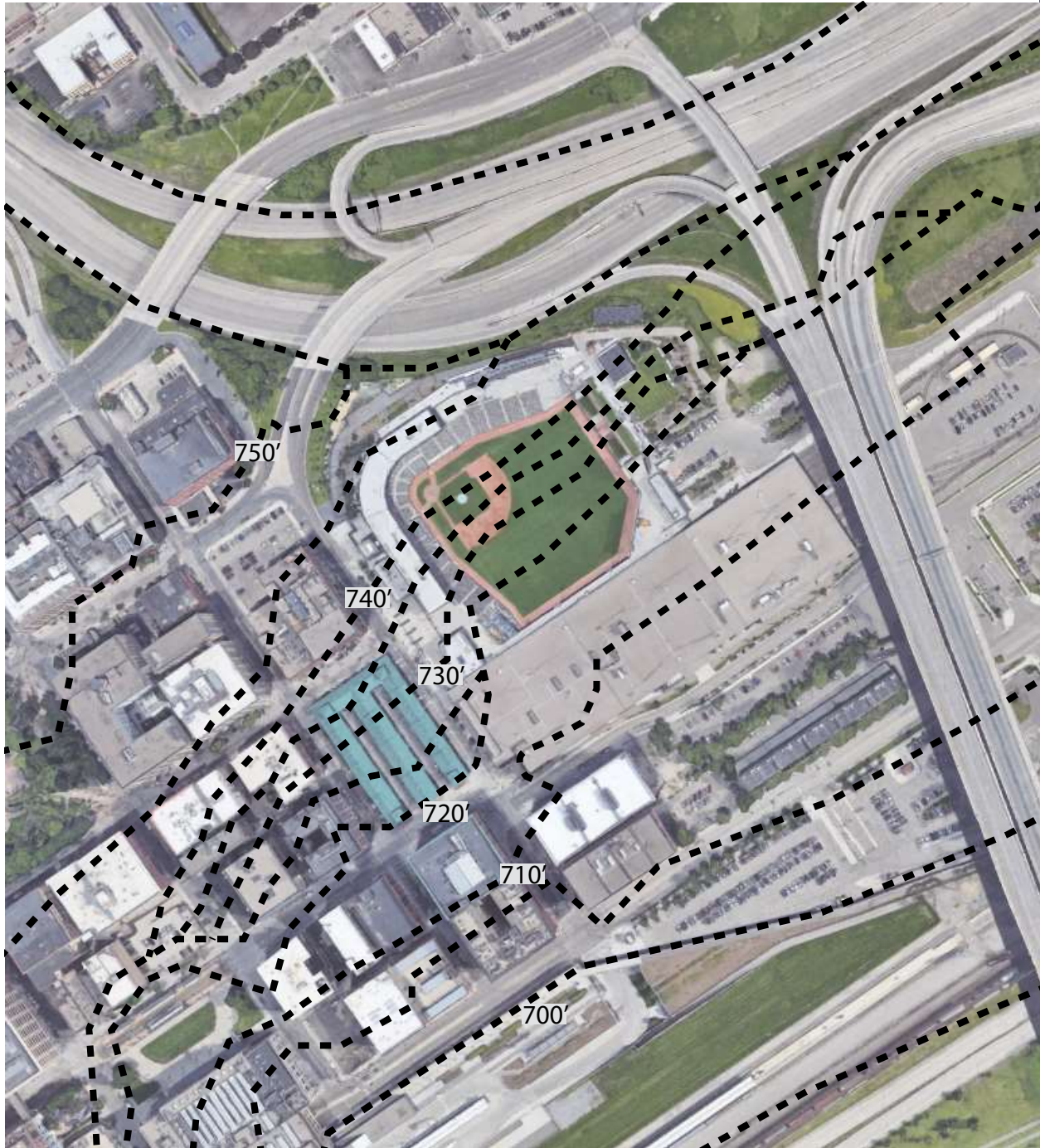
Vehicle

Public transit

Figures 67

Site Contour

The contour map shows a slope going downhill from the freeway down to the Mississippi River. With the sharpest slope running through the farmers market and CHS Field. The warehouse is on a relatively flat slope, with little change in elevation.



Site Contours

Figures 68



Back entrance. Includes art and entrance to green space. It is harder to find, needing to walk around rail yard and under the bridge.

Main entrance to CHS Field. A open common space adjacent to warehouse and farmers market

Warehouse entrance. The facade is more defined and interesting than the rest of the building. could be integrated in future design.

Metro transit warehouse. It is a blank facade and void of excitement. Fans and pedestrians have to walk past Warehouse and railyard to get to ballpark entrances or to the city.



CHS field and warehouse

Figures 69-71



The farmers market offers a central common space in front of ballpark. Space is used as a parking lot during games and weekdays. Only as a farmers market on weekends from the spring to fall.

The market varies produce depending on the time of the year. For example, the weekend after Thanksgiving, christmas trees were being sold.



Make the space a permanent market adjacent to farmer's market, open all year may produce a large opportunity as a popular destination.



Using space during Saints games for activities outside the ballpark would be beneficial as well.



Farmers Market

Figures 72-75

Dog Park

The dog park is located between CHS and the freeway. Offering a space for people to bring their pets and socialize. The space has a few benches, a pergola, and some vegetation. The space could have more activities or features that would make the space more interesting.

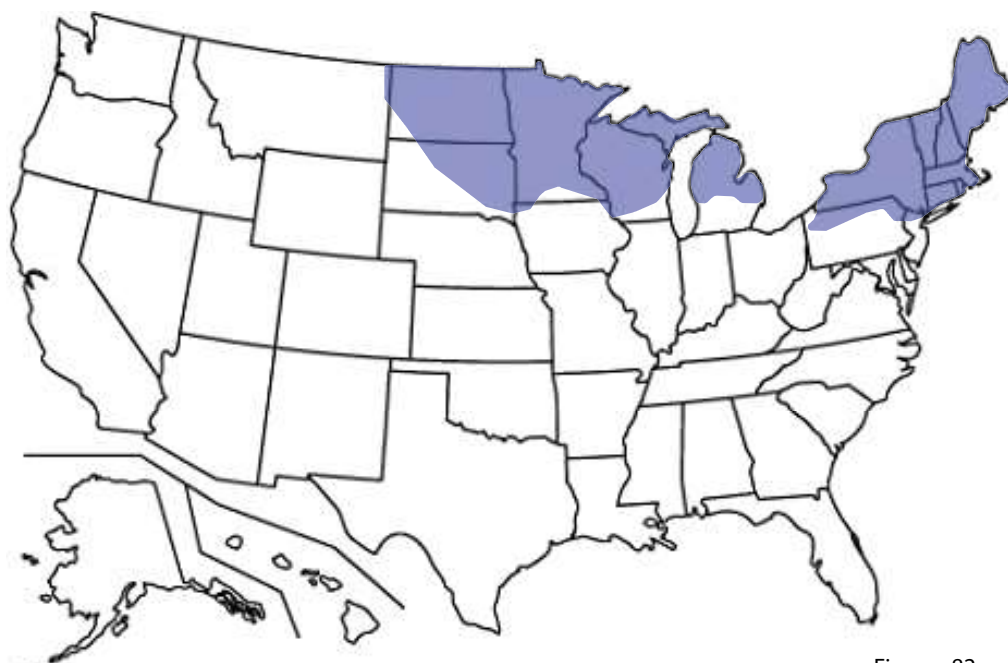


Dog Park

Figures 76-81

Climate

St Paul is located in the Upper Midwest, having a continental climate. Winters are cold and snowy, while summers are hot and humid, falling under the humid continental climate zone. The city experiences a wide range of weather and precipitation.

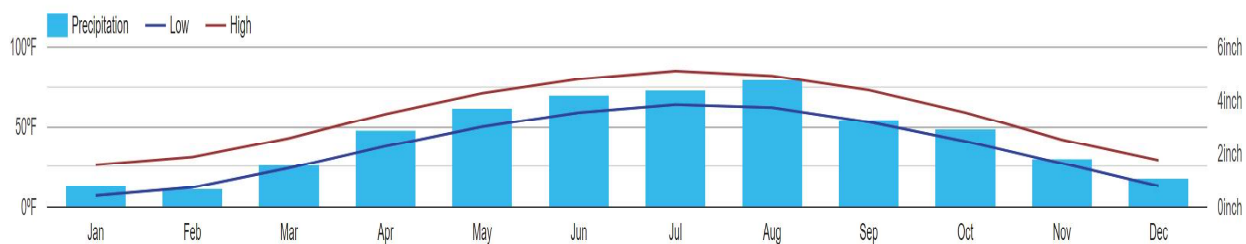


Climate map

Figures 82

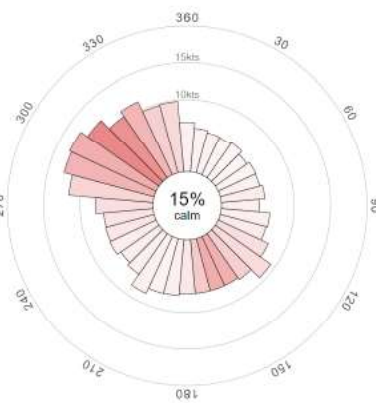
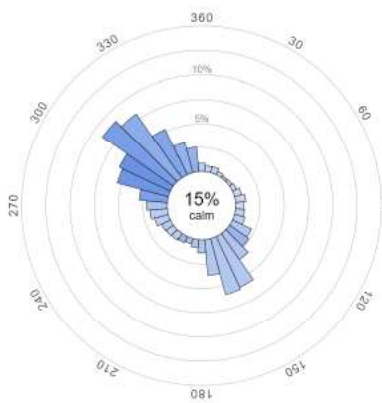
St Paul Climate Chart

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average High Temp (F)	26	31	43	58	71	80	85	82	73	59	42	29
Average Low Temp (F)	7	12	24	38	50	59	64	62	53	41	27	13
Average Precipitation (in)	0.77	0.67	1.55	2.88	3.70	4.20	4.40	4.78	3.27	2.91	1.82	1.09

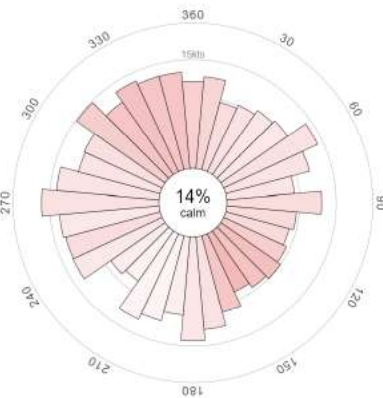
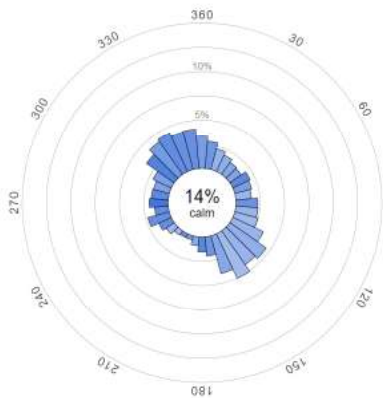


Figures 83

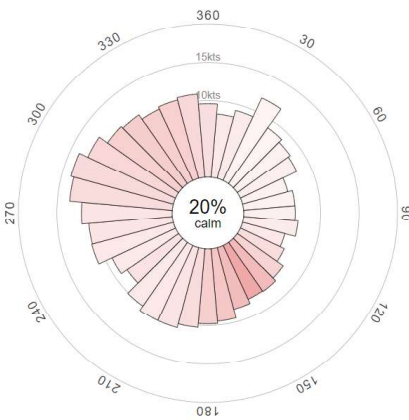
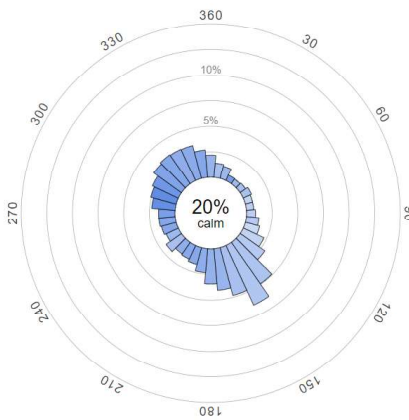
Winter Winds



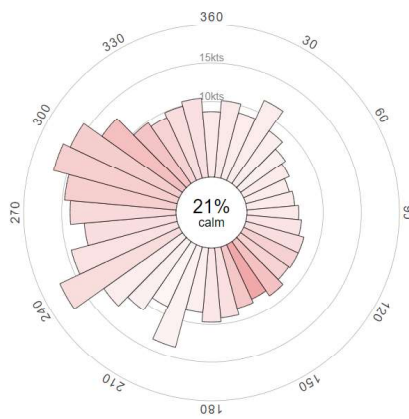
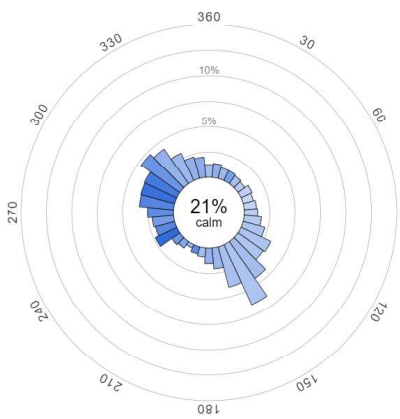
Spring Winds



Summer Winds



Fall Winds



Frequency by Direction

Average Speed by Direction

Figures 84

Space Allocation

When designing a mixed use entertainment space near a ballpark in an urban environment, it is important to understand potential uses and map them out. And the organization is important, as spaces must efficiently flow together without feeling cramped or wasted. The average sizes for all spaces will be obtained from internet sources and the International Building Code. The analysis will be done by plans and computer modeling, using scales and figures to find space. To judge whether the project meets criteria, I will compared similar models of space.

Energy Consumption

Designing multi-use entertainment, energy will be consumed regularly, energy will be measured in Kwh. Proper lighting of spaces, will be needed, during the day and night. Analysis will be conducted by computer simulations where the model can be placed in and testing energy load required. To judge criteria, model simulations will be measured.

Environmental Performance (luminous, thermal, acoustical environments, ecosystem balance)

It is important to create an environmentally sustainable project, which will be measured by its carbon footprint. The project will use sources such as LEED to implement passive designs, such as daylighting and natural ventilation. The analysis will be conducted using computer models, such as energy models for optimum lighting and ventilation. The performance will be judged using LEED standards.

Behavioral Performance (usage patterns)

Creating an entertainment space in an urban environment, it is important to think about behavior and usage. To optimize the design will be analyzed extensively to predict and enhance visitor experiences for ballgames. Designing for adaptability and a diverse visitor experience will be the target of this analysis. Using computer simulation software, like AnyLogic, it will collect data from a variety of simulations at various times of the year and

predict the behavior of pedestrians. The simulations will inform layout organization.

Psychological Impact (aesthetics, sensory experiences)

When designing for sports, the space has to take advantage of the sporting event by enhancing the game experience before and after the game. And beyond sports, the space has to fit within its urban fabric. To find the aesthetics of the design, looking into the neighboring buildings for inspiration. To measure the experiences, research and personal experience will be relied on to determine goals and its impact psychologically. Feedback will be decided the final judgment of the project.

Environmental Impact

Located in an historical urban community it is important to understand the projects impact on its neighborhood. The historic district offers a unique context and measuring the impact of the design to the community is crucial. By integrating the project with the urban fabric without diminishing the character and views of others offers greater positive impact. The success of the preserving the district will be measured by analysis on the historical district regulations.

Code Compliance

The project will be designed to meet all relevant building codes, including the International Building Code. Located in a historical district, certain restrictions will be in place set by the district. The project may also be restricted through regulations by the National Park Service for historical preservation. Any specific code questions will be directed to NDSU faculty for clarification or other code officials as necessary.

Summary

In summary, the performance of the thesis project will be conducted by a variety of criteria that most influence the design and function of the project. The evaluation of the criteria is essential to judge the success of the project.

The categories include space allocation, energy consumption, environmental performance, behavioral performance, environmental impact, and code compliance. Each are measured and analyzed by multiple sources to meet criteria.

Space allocation will deal with the organization of plans, placing them in efficient and logical locations in relation to other space. This will inform the development of the floor and site plans of the project, from bubble diagrams to final plans. But to determine the main spaces locations, the understanding of pedestrian traffic in the area, with the help of AnyLogic, will help develop patterns and make focal points.

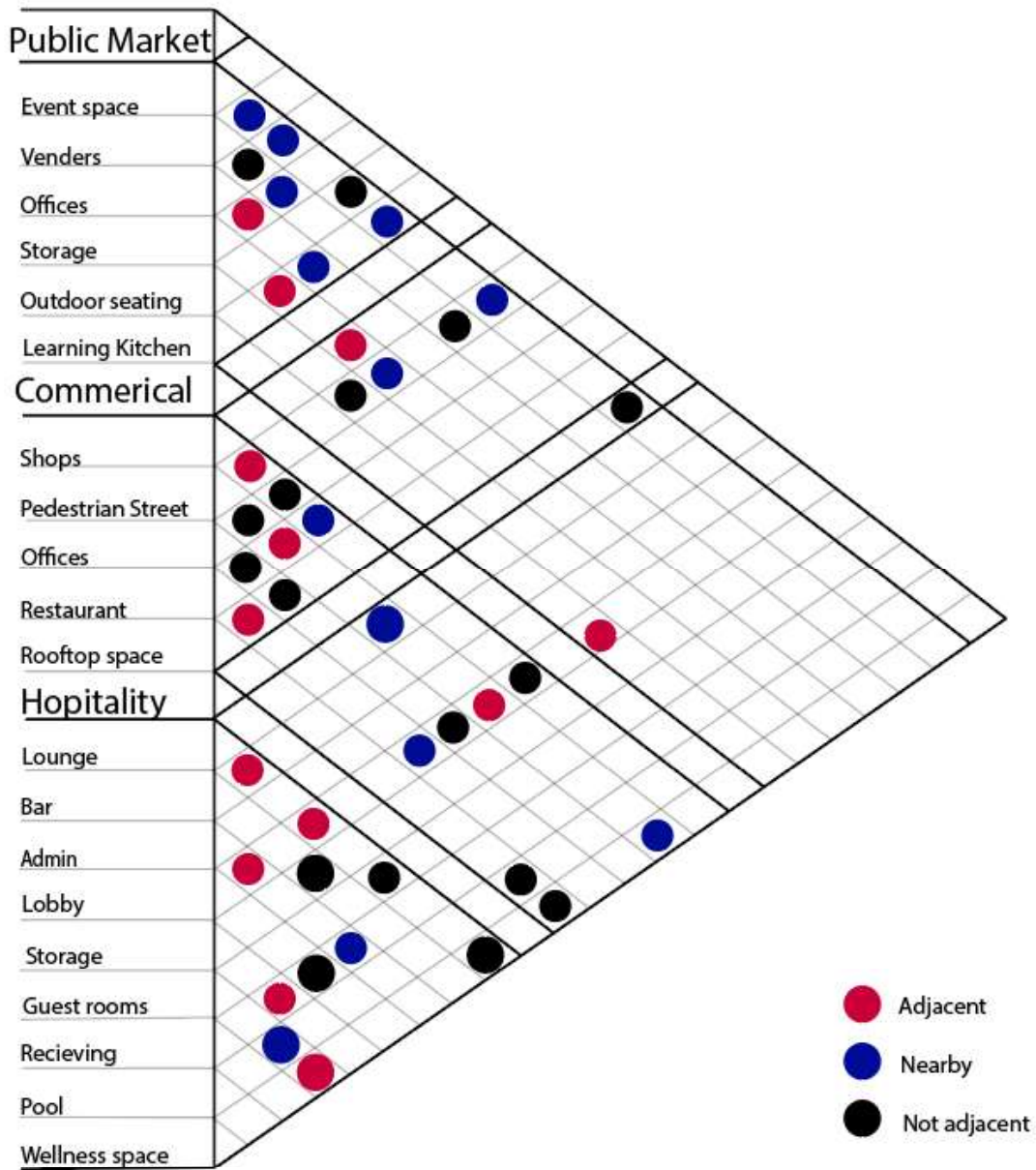
Environmental factors such as energy consumption and environmental performance will create a base to determine the amount of electricity used compared to the amount produced/saved. This will require both active and passive designs. Simulations will create models that further inform buildings performance and design. The project will be judged by LEED building standards.

Some social factors include, urban environmental impact and the psychological impact. The project is located in a historical district, full of history and culture, they are diverse and unique. The impact on the community will rely on a seamless integration in the urban environment, through aesthetics or functionality, that doesn't obstruct or diminished the historical district's character. The project has to enhance the experience of the event or destination, and create a diverse context. And since the project is in a historical district, more restrictions are in place alongside existing building codes.

Space Allocation			
	# Units	SF per unit	total SF
Market			
event space/ indoor seating	1	11250	11250
venders/stands	20	1500	30000
restrooms	4	500	2000
parking garage	1	800	800
storage	1	800	800
commissary	1	2675	2675
outdoor seating	4	500	2000
Commercial			
pedestrian street	1	N/A	TBD
restaurant	2	4000	8000
shops	3+	1500	4500+
office spaces	TBD	150 to 250 per person	30000+
rooftop space	1+	4000	4000+
Hospitality			
guestrooms	TBD	330	TBD
lobby	1	2500	2500
lounge/dining	1	4000	4000
kitchen	1	2600	2600
pool	1	2500	2500
wellness space	1	2000	2000
offices	4	750	3000
housekeeping	1	3000	3000
Garage	1	800	800
Staff locker/ space	1	2000	2000
Storage	1	500	500

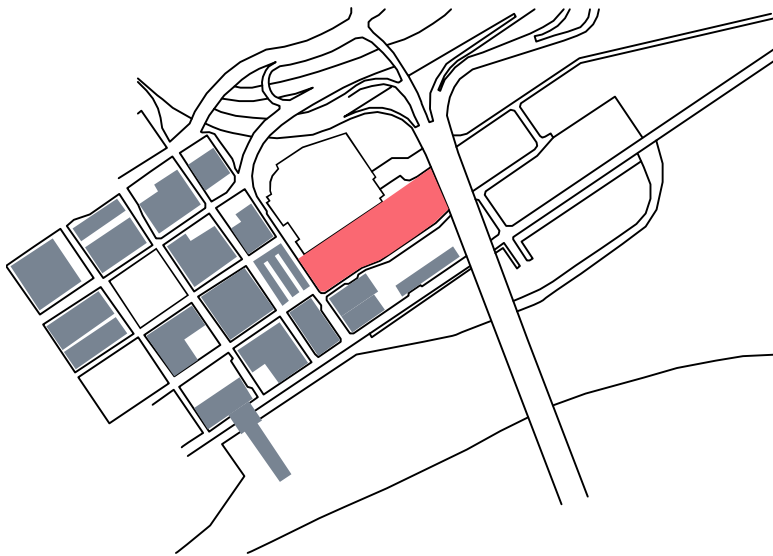
Space allocation chart

Program Integration



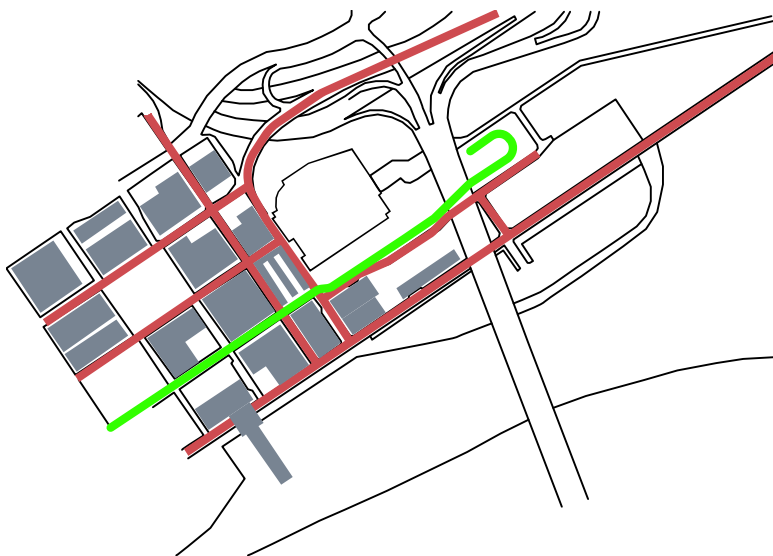
Space Interaction Matrix

Figures 85



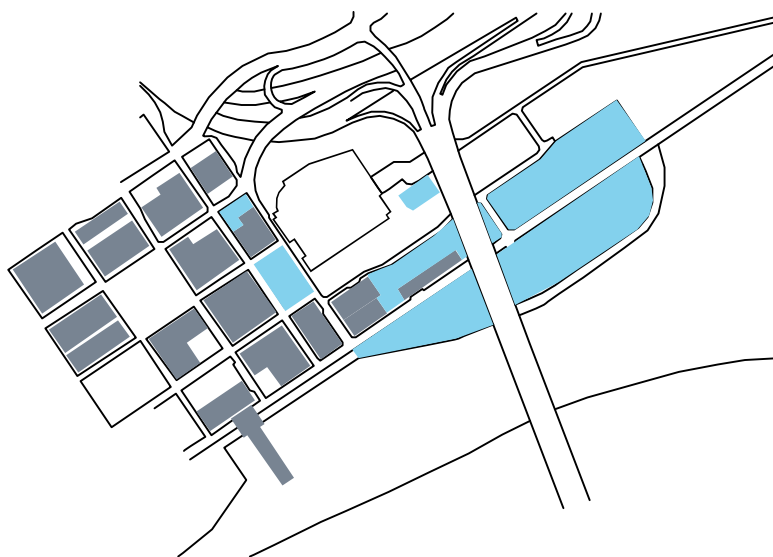
Site Location

The site is located next to CHS Field and the St Paul's Farmers' Market. It is on the edge of downtown and the interstate.



Transit Map

The red shows where car traffic is common. The green is the existing metro line that travels from Minneapolis to St. Paul, it can be used to promote public transit.



Site Parking

There are several current locations to park. There are two major parking lots to the east and south. The focus is to keep the existing parking and create a metro stop to lower the need for parking.

Figures 86 -88



3D Aerial Site Map

Figures 89



Proposed Project

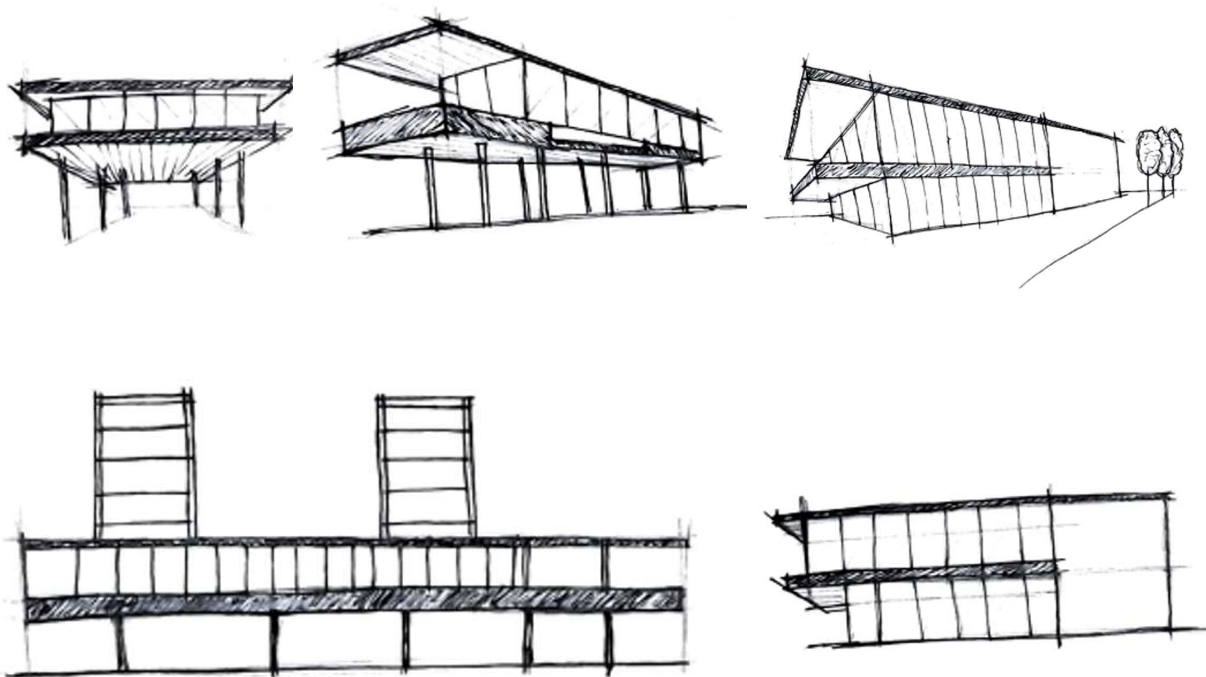
Figures 90



CHS Field



Figures 91-92

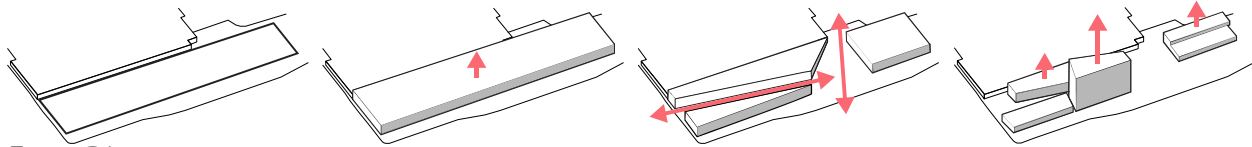


Concept Sketches

Figures 93-97

Inspiration

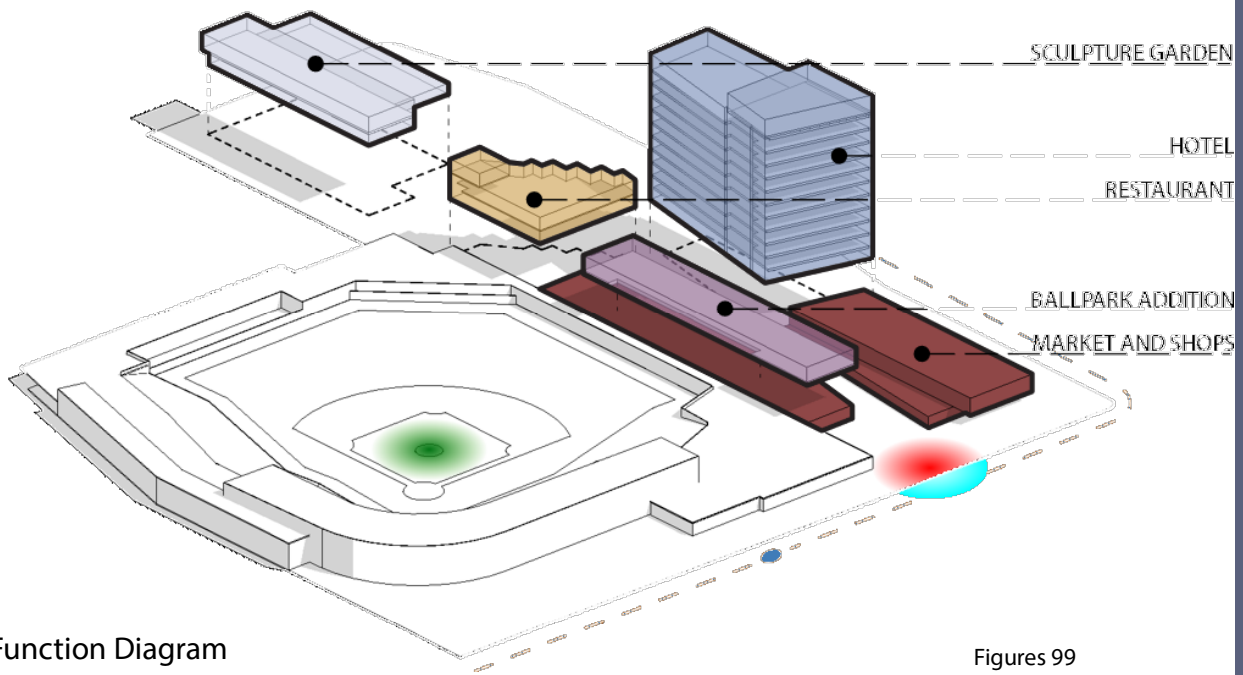
When looking to develop the design and form I looked to the CHS Field for inspiration. One of its prominent features is the upper deck with its cantilevers that extend over the entrance of the ballpark. I wanted to imitate the existing upper deck's cantilever design. As well as using similar materials to the ballpark, which includes blacken steel, grey masonry, and a bright wood finish.



Form Diagram
Form

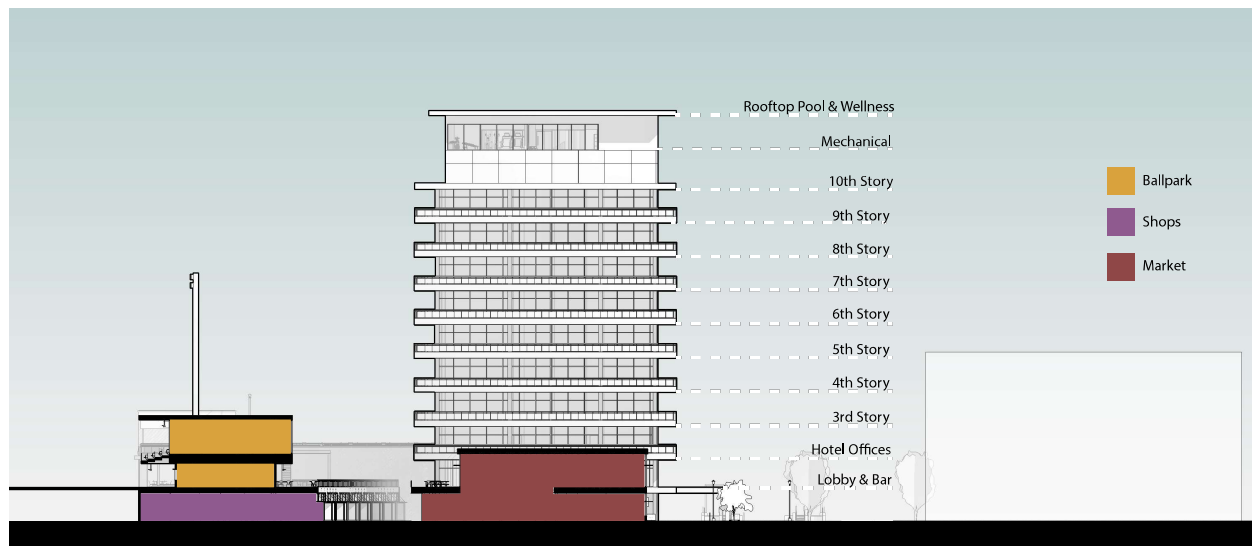
Figures 98

For the orientation of the project, I wanted to be able to add more seats and amenities to the ballpark so I decided to place it directly adjacent to rightfield. Next, rising the elevation so that that it matches the stadium's current height. To connect to the center of the site, two pathways were created that connect the two entrances to the ballpark and converge into a plaza. Then Changing the elevations to the buildings in the project to create views into the ballpark.



Function Diagram

Figures 99



Section Cut

Figures 100

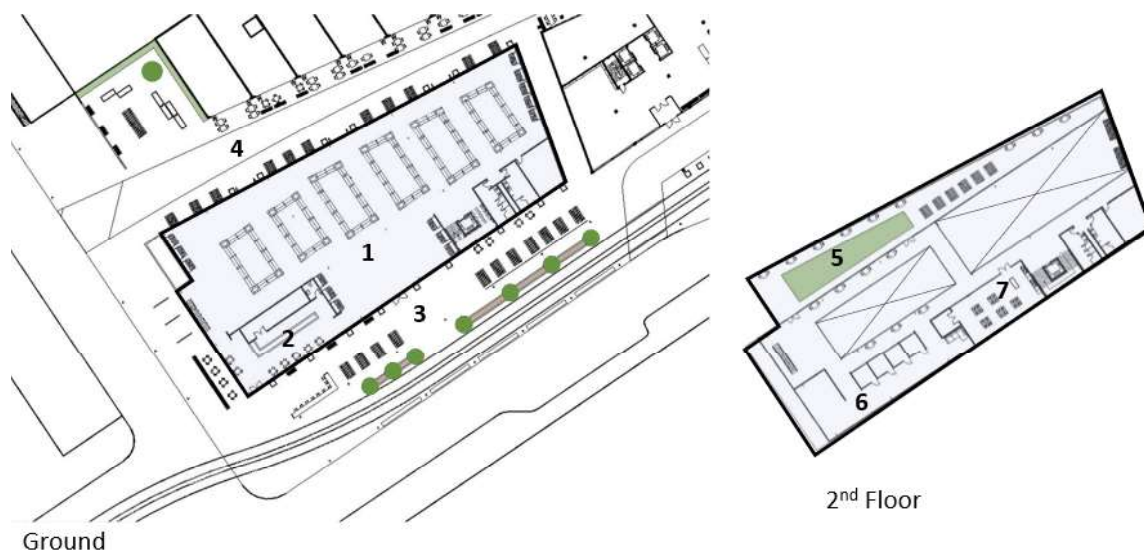


Master Plan

-  Sports Shop & Ticketstand
-  Shops
-  Market
-  Hotel
-  Sculpture Garden & Parking

0 60 240

Figures 101



Market

- Ground floor
 - 1. open for flexible organization
 - 2. Café
 - 3. Outdoor seating
 - 4. Pedestrian street
- 2nd floor
 - 5. Outdoor seating
 - 6. Market offices
 - 7. Learning kitchen

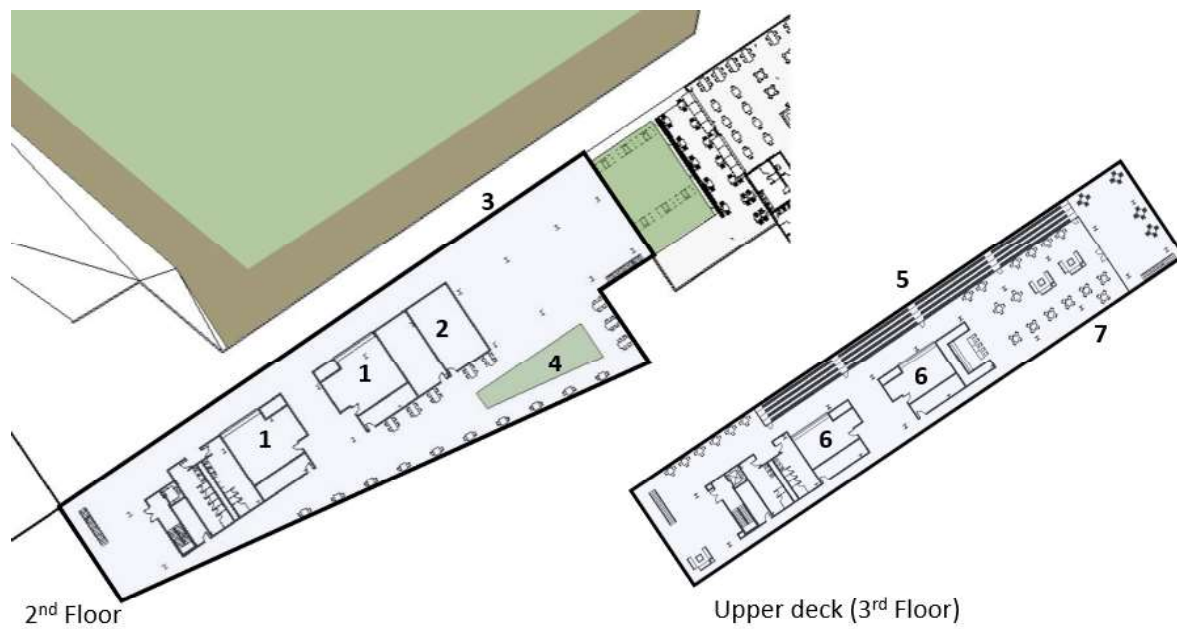
Market Plans

Figures 102-103



Market Perspectives

Figures 104-106

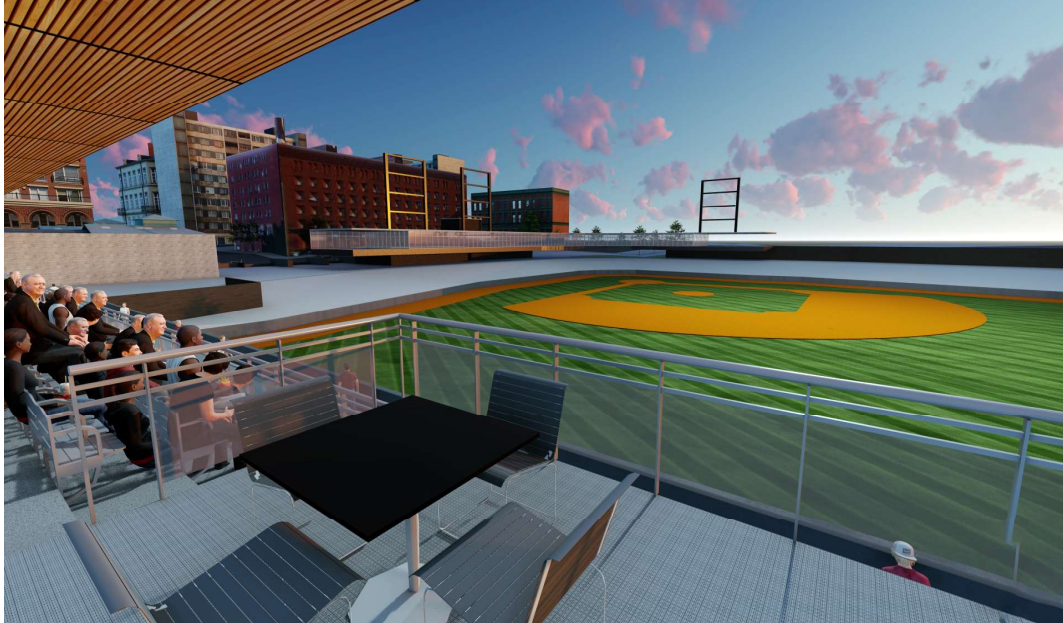
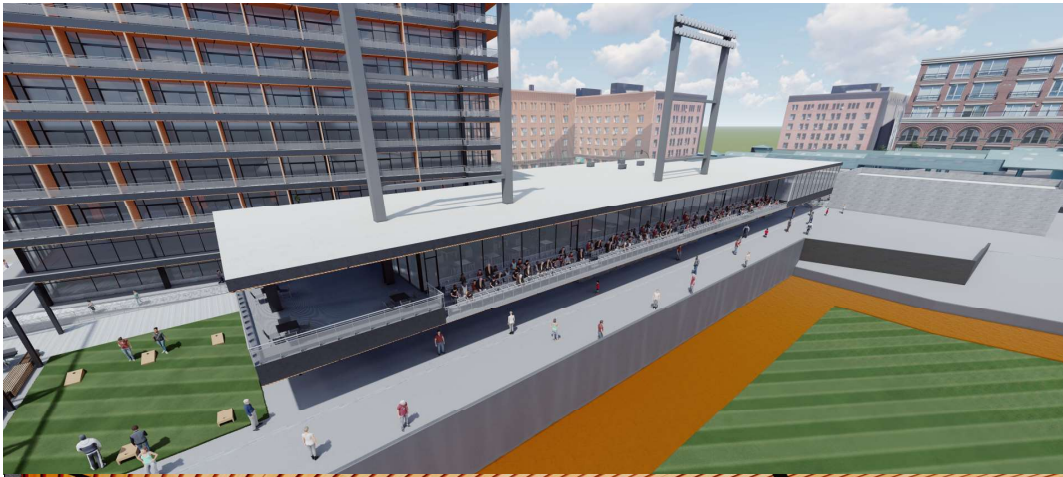


Ballpark Addition

1. Concessions	5. Grandstand seating
2. Storage	• 352 additional seats
3. SOR space	6. Concessions
4. Backyard seating	7. Common Space

Ballpark Plans

Figures 107-108



Ballpark Perspectives

Figures 109-111



Ballpark Restaurant

- Located on 2nd level
 - 1. Outdoor patio
 - 2. Indoor seating
 - 3. Kitchen
- Rooftop Bar
 - 4. Rooftop bar
 - 5. Circulation
 - 6. Common Space

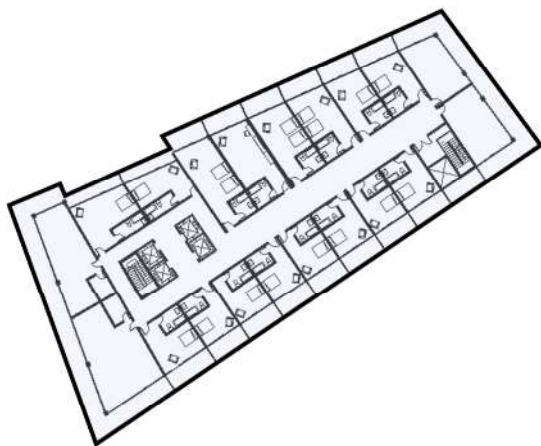
Restaurant Plan

Figures 112-113



Restaurant Perspectives

Figures 114-116



Guest Floor (Floors 3-10)



Pool (12th Floor)

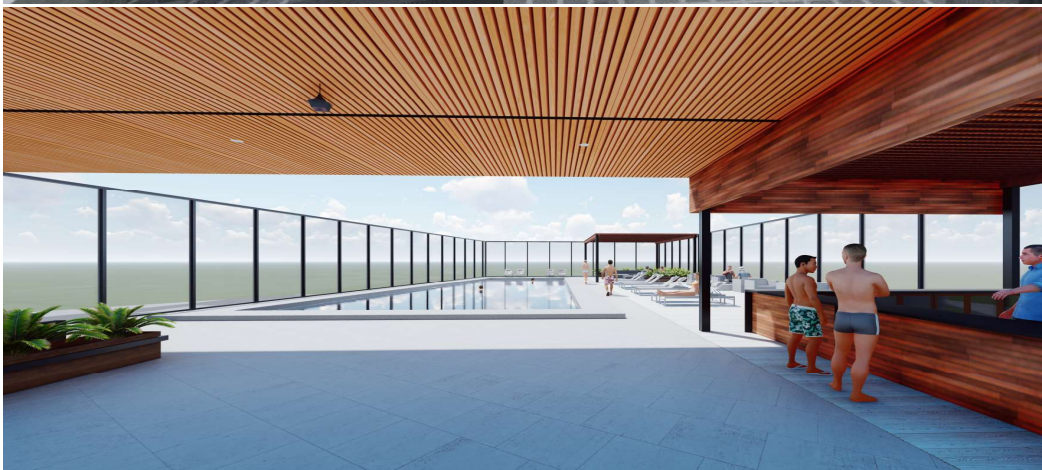
Hotel

- 20 units per floor
 - 160 total
- Electrochromic glass windows
 - Controlled by guests

- 1. Pool
- 2. Hot tub
- 3. Snack bar
- 4. Yoga Room
- 5. Wellness Room
- 6. Sauna
- 7. Locker Rooms

Hotel Plans

Figures 117-118



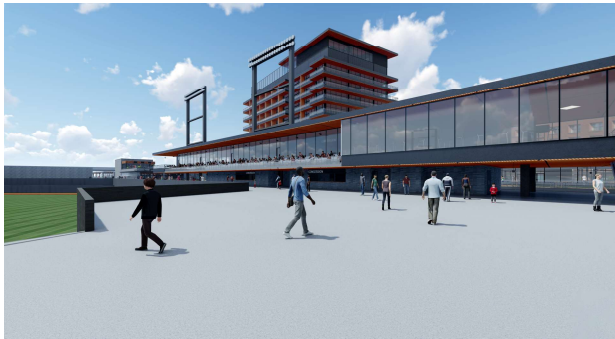
Hotel Perspectives

Figures 119-121



Site Perspectives

Figures 122-126

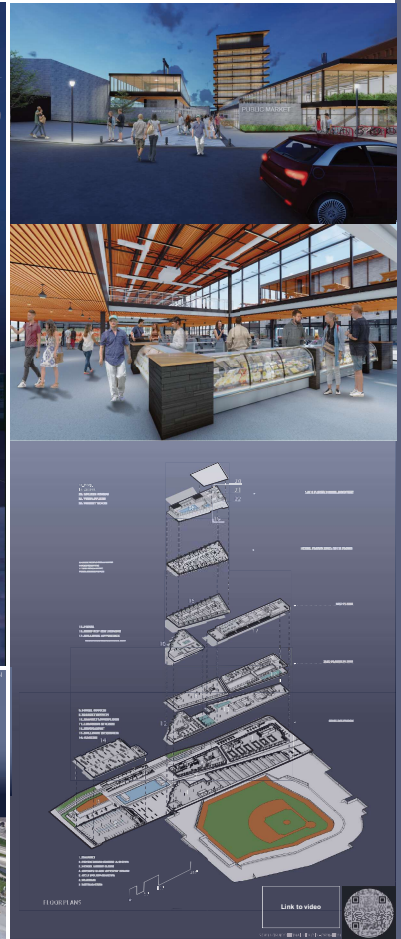


Ballpark Perspectives

Figures 127-131



Digital Final Board

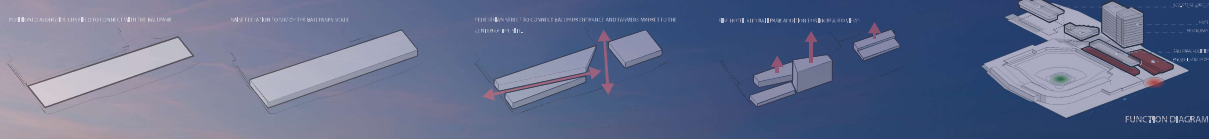


Figures 132

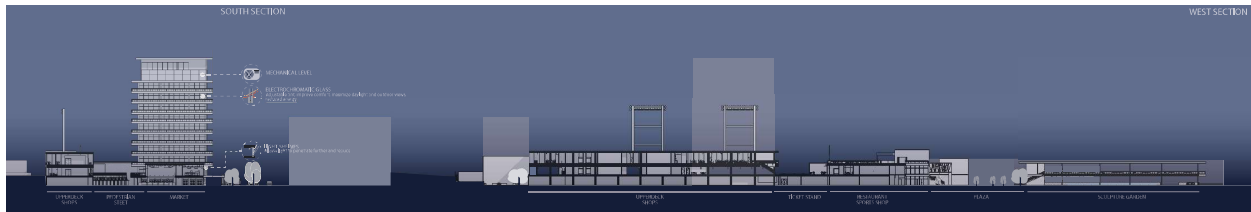
OVER THE FENCE

CREATING A SYMBIOTIC RELATIONSHIP BETWEEN SPORTS AND COMMUNITY

Sports are a major source of entertainment worldwide, providing an escape and bring people together. The construction of sporting venues, like stadiums or ballparks, are promoted as tools for economic growth for their communities, but often fail to deliver. The environment around them is often degraded, typically surrounded by parking lots that are left vacant for most of the year. Instead of building new stadiums, this team looks to reimagine the development of an existing major league ballpark to enhance the overall experience of the venue during games, as well as providing an attraction beyond the world of sports.



- GOALS**
- FORM AND MATERIALS**
 - Create a modern, multi-story building that complements the surrounding urban environment.
 - Use high-quality materials and finishes to create a sense of luxury and permanence.
 - ECONOMIC AND SOCIAL SUSTAINABILITY**
 - Create a vibrant, walkable neighborhood that attracts residents, businesses, and visitors.
 - Incorporate green building practices and sustainable design to reduce the building's carbon footprint.



Digital Board

Figures 133-134



Digital Board

Figures 135

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Previous Studio Experience

2nd Year

Fall 2017-	<i>Milt Yergens-</i>	Tea House (Moorhead, MN) Boathouse (Boston, MA)
Spring 2018-	<i>Darryl Booker-</i>	Passive Dwelling (Marfa, TX) Mixed-use (Moorhead, MN) Birdhouse (Pritzker Prize)

3rd Year

Fall 2018-	<i>Paul Gleye-</i>	Visitor Center (Fargo, ND) Student Center (Fargo, ND)
Spring 2019-	<i>Emily Guo-</i>	Senior Center (Xi'an, China) Native American Museum (Moorhead, MN)

4th Year

Fall 2019-	<i>Mark Barnhouse-</i>	Highrise (Miami, FL)
Spring 2020-	<i>Paul Gleye-</i>	Urban Design (Brussels, Belgium)

5th Year

Fall 2020-	<i>Lance Josal-</i>	Fenway Park (Boston, MA)
Spring 2021-	<i>Bakr Aly Ahmed-</i>	Thesis Design (St Paul, MN)



Matthew Kohl

[Redacted]



Lino Lakes, MN

[Redacted]